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NBS FORTRAN Test Programs

Volume 2—Listings for Version 1

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INTRODUCTION

This document, Volume 2 of three volumes, contains the program listings and supporting input data for the NBS FORTRAN Test Programs, Version 1, developed by the Institute for Computer Sciences and Technology, National Bureau of Standards. The test programs are written in ASA Standard FORTRAN and test the language elements described in the ASA Standard FORTRAN document X3.9-1966.

The NBS FORTRAN Test Programs, Version 1, contain 116 test units, each structured as an executable FORTRAN program. Test units numbered 008, 009, 310, and 312 contain input data which is listed following the respective test unit.

This listing is in the order described in Volume 1 Section III Distribution Tape Organization.

Volume 1, Section I describes the system design, the programming techniques and conventions used in the program development and should enable the user to extend, alter or reorganize the test programs.

Volume 1, Section II defines the organization and operating procedure for performing the tests and contains a set of representative results obtained from actual running of the test programs on several FORTRAN processors.

Volume 1, Section III describes the order and location of each test unit and data as recorded on magnetic tape for distribution.

Volume 2 contains the program listings for the NBS FORTRAN Test Programs, Version 1.

Volume 3 contains the program listings for the NBS FORTRAN Test Programs, Version 3.

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C*                                                                      P0001780
C* ACTG2 - 100 BASIC EXTERNAL FUNCTION  ATAN2            M - 1 - - -  56P0001790
C*                                                                      P0001800
C* DATN2 - 101 BASIC EXTERNAL FUNCTION  DATAN            M - 1 - - -  66P0001810
C*                                                                      P0001820
C* DMODA - 102 BASIC EXTERNAL FUNCTION  DMOD             M - 1 - - -  63P0001830
C*                                                                      P0001840
C* CABSA - 103 BASIC EXTERNAL FUNCTION  CABS             M - 1 - - -  84P0001850
C*                                                                      P0001860
C* BSFTS - 110 STATEMENT FUNCTIONS - INTEGER AND REAL    M - 1 - - -  74P0001870
C*  BSFDF - 005 STATEMENT FUNCTION DEFINITION            M - - - - -  35P0001880
C*                                                                      P0001890
C* FSFTS - 111 STATEMENT FUNCT.- D.P., COMPLEX, LOGICAL  M - 1 - - - 108P0001900
C*  FSFDF - 006 STATEMENT FUNCTION DEFINITIONS           M - - - - -  58P0001910
C*                                                                      P0001920
C* CPXAD - 140 ADDITION AND SUBTRACTION OF COMPLEX       M - 1 - - -  76P0001930
C*                                                                      P0001940
C* CPXMU - 141 MULTIPLICATION OF COMPLEX NUMBERS         M - 1 - - - 141P0001950
C*                                                                      P0001960
C* CPXDV - 142 DIVISION OF COMPLEX NUMBERS               M - 1 - - -  83P0001970
C*                                                                      P0001980
C* CPXEX - 143 EXPONENTIATION OF COMPLEX NUMBERS         M - 1 - - - 125P0001990
C*                                                                      P0002000
C* CPXOP - 144 ARITHMETIC OPERATIONS ON COMPLEX          M - 1 - - -  63P0002010
C*                                                                      P0002020
C* CREAD - 145 ADD AND SUBTRACT COMPLEX AND REAL NUMBERS M - 1 - - -  67P0002030
C*                                                                      P0002040
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C* CREMU - 146 MULTIPLY COMPLEX BY REAL NUMBERS          M - 1 - - -  62P0002050
C*                                                                      P0002060
C* CREDV - 147 DIVIDE COMPLEX BY REAL AND THE REVERSE    M - 1 - - -  58P0002070
C*                                                                      P0002080
C* CREOP - 148 COMBINED OPERATIONS ON COMPLEX AND REAL   M - 1 - - -  66P0002090
C*                                                                      P0002100
C* MISC3 - 149 BLANKS IN,CONT. OF STATEMENT TO MAX LINES M - 1 - - -  97P0002110
C*                                                                      P0002120
C* MISC4 - 150 SPECIAL CHARACTERS FOR CONTINUATIONS      M - 1 - - - 105P0002130
C*                                                                      P0002140
C* BRFCP - 160 REAL EXTERNAL FUNCTIONS                   M - 1 - - -  82P0002150
C*   AFS - 400    REAL ARGUMENT                          F - - - - - 010P0002160
C*   BFS - 420    REAL ARGUMENTS                         F - - - - -  10P0002170
C*   CFS - 430    INTEGER ARGUMENT                       F - - - - -  10P0002180
C*   DFS - 440    INTEGER ARGUMENTS                      F - - - - -  11P0002190
C*   EFS - 450    ARRAY NAME AS ARGUMENT                 F - - - - -  11P0002200
C*   FFS - 460    DIFFERENT TYPES OF ARGUMENTS           F - - - - -  15P0002210
C*                                                                      P0002220
C* BIFCP - 161 INTEGER EXTERNAL FUNCTIONS                M - 1 - - -  87P0002230
C*  IAFI - 401    REAL ARGUMENT                          F - - - - -  10P0002240
C*  IBFI - 421    REAL ARGUMENTS                         F - - - - -  10P0002250
C*  ICFI - 431    INTEGER ARGUMENT                       F - - - - -  10P0002260
C*  IDFI - 441    INTEGER ARGUMENTS                      F - - - - D  13P0002270
C*  IEFI - 451    ARRAY NAME AS ARGUMENT                 F - - - - -  11P0002280
C*  IFFI - 461    DIFFERENT TYPES OF ARGUMENTS           F - - - - -  15P0002290
C*                                                                      P0002300
C* FRFCP - 162 REAL EXTERNAL FUNCTIONS                   M - 1 - C - 132P0002310
C*   GFS - 402    D.P. ARGUMENT                          F - - - - -  11P0002320
C*   HFS - 422    COMPLEX ARGUMENTS                      F - - - - -  12P0002330
C*  IRFS - 432    LOGICAL ARGUMENT                       F - - - - -  16P0002340
C*  JRFS - 442    EXTERNAL PROCEDURE                     F - - - - -  11P0002350
C*   RFS - 452    DIFFERENT TYPES OF ARGUMENTS           F - - - C -  29P0002360
C*                                                                      P0002370
C* FIFCP - 163 INTEGER EXTERNAL FUNCTIONS                M - 1 - C - 123P0002380
C*   IFI - 403    D.P. ARGUMENT                          F - - - - -  11P0002390
C*   JFI - 423    COMPLEX ARGUMENTS                      F - - - - -  12P0002400
C*   KFI - 433    LOGICAL ARGUMENT                       F - - - - -  16P0002410
C*   LFI - 443    EXTERNAL PROCEDURE                     F - - - - -  11P0002420
C*   MFI - 453    DIFFERENT TYPES OF ARGUMENTS           F - - - C -  29P0002430
C*                                                                      P0002440
C* CFCCP - 164 COMPLEX EXTERNAL FUNCTION                 M - 1 - C - 132P0002450
C*   AFC - 404    REAL ARGUMENT                          F - - - - -  10P0002460
C*   BFC - 414    INTEGER ARGUMENT                       F - - - - -  10P0002470
C*   CFC - 424    ARRAY NAME AS ARGUMENT                 F - - - - -  11P0002480
C*   DFC - 434    D.P. ARGUMENT                          F - - - - -  12P0002490
C*   EFC - 444    COMPLEX ARGUMENT                       F - - - - -  11P0002500
C*   FFC - 454    LOGICAL ARGUMENT                       F - - - - -  15P0002510
C*   HFC - 464    DIFFERENT TYPES OF ARGUMENTS           F - - - C -  28P0002520
C*                                                                      P0002530
C* DPFCP - 165 DOUBLE PRECISION EXTERNAL FUNCTIONS       M - 1 - C - 135P0002540
C*   AFD - 405    REAL ARGUMENT                          F - - - - -  10P0002550
C*   BFD - 415    INTEGER ARGUMENT                       F - - - - -  10P0002560
C*   CFD - 425    D.P. ARGUMENTS                         F - - - - -  11P0002570
C*   DFD - 435    COMPLEX ARGUMENT                       F - - - - -  12P0002580
C*   EFD - 445    LOGICAL ARGUMENT                       F - - - - -  16P0002590
C*   FFD - 455    EXTERNAL PROCEDURE                     F - - - - -  11P0002600
C*   GFD - 465    ARRAY NAME AS ARGUMENT                 F - - - - -  12P0002610
C*   HFD - 475    DIFFERENT TYPES OF ARGUMENTS           F - - - C -  32P0002620
C*                                                                      P0002630
C* BFCCP - 166 LOGICAL EXTERNAL FUNCTIONS                M - 1 - C - 144P0002640
C*   AFB - 406    REAL ARGUMENT                          F - - - - -  10P0002650
C*   BFB - 416    INTEGER ARGUMENT                       F - - - - -  10P0002660
C*   CFB - 426    D.P. ARGUMENT                          F - - - - -  11P0002670
C*   DFB - 436    LOGICAL ARGUMENT                       F - - - - -  11P0002680
C*   EFB - 446    COMPLEX ARGUMENT                       F - - - - -  12P0002690
C*   FFB - 456    ARRAY NAME AS ARGUMENT                 F - - - - -  12P0002700
C*   GFB - 466    EXTERNAL PROCEDURE                     F - - - - -  11P0002710
C*   HFB - 476    DIFFERENT TYPES OF ARGUMENTS           F - - - C -  25P0002720
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C*                                                                      P0002730
C* SBRTN - 167 SUBROUTINE SUBPROGRAM                     M - 1 - C - 103P0002740
C*   AAQ - 407    INTEGER,REAL VARIABLES,ARRAY ELEMENTS  S - - - - -  23P0002750
C*   ABQ - 417    ARRAY ELEMENTS                         S - - - - -  13P0002760
C*   ACQ - 427    NO ARGUMENT LIST                       S - - - C -  21P0002770
C*                                                                      P0002780
C* FSBRT - 168 SUBROUTINE SUBPROGRAM                     M - 1 - C - 153P0002790
C*   ADQ - 408    DIFFERENT TYPES OF ARGUMENTS           S - - - - -  39P0002800
C*   AEQ - 418    ARRAY NAMES AND INTEGER ARGUMENTS      S - - - - -  23P0002810
C*   AFQ - 428    NO ARGUMENT LIST                       S - - - C -  41P0002820
C*                                                                      P0002830
C* BLKDT - 169 BLOCK DATA TEST                           M - 1 - - -  71P0002840
C* BLOKD - 409    BLOCK DATA SUBPROGRAM                  B - - - - D  36P0002850
C*                                                                      P0002860
C* BLKDA - 179 BLOCK DATA TEST                           M - 1 - - -  70P0002870
C* BLAKD - 419    BLOCK DATA SUBPROGRAM                  B - - - - D  24P0002880
C* BLBKD - 429    BLOCK DATA SUBPROGRAM                  B - - - - D  17P0002890
C* BLCKD - 439    BLOCK DATA SUBPROGRAM                  B - - - - D  20P0002900
C*                                                                      P0002910
C* UNFRW - 180 UNFORMATTED WRITE AND READ                M - 1 X - - 133P0002920
C*                                                                      P0002930
C* BACUP - 182 BACKSPACE TAPE                            M - 1 X - -  74P0002940
C*                                                                      P0002950
C* DOTRM - 190 DO LOOPS - TERMINAL STATEMENTS            M - 1 - - - 135P0002960
C*                                                                      P0002970
C* DOLMT - 191 DO LOOPS - PARAMETERS AS VARIABLE NAMES   M - 1 - - -  62P0002980
C*                                                                      P0002990
C* DONSC - 192 DO LOOPS - COMPLETELY NESTED NEST         M - 1 - - - 166P0003000
C*                                                                      P0003010
C* DONSI - 193 DO LOOPS - INCOMPLETE DO, EXIT BY GO TO   M - 1 - - -  60P0003020
C*                                                                      P0003030
C* DONSX - 194 DO LOOPS - EXTENDED RANGE                 M - 1 - - - 130P0003040
C*                                                                      P0003050
C* DONML - 195 DO LOOPS - NESTED NEST                    M - 1 - - -  65P0003060
C*                                                                      P0003070
C* DONIO - 196 DO LOOPS - I/O TERMINAL STATEMENTS        M - 1 X - -  91P0003080
C*                                                                      P0003090
C* MORDO - 197 DO LOOPS -I/O,STATMT FT.,INTR FT.,CALL    M - 1 X - - 143P0003100
C*  BSFDF - 005 STATEMENT FUNCTIONS                      M - - - - -  35P0003110
C*   MDQ - 412    SUBROUTINE SUBPROGRAM                  S - - - - -  13P0003120
C*                                                                      P0003130
C* SUBR1 - 200 SUBROUTINE - OPERATIONS DONE AT SUB LEVEL M - 1 X C -  52P0003140
C* SUBRQ - 410    SUBROUTINE SUBPROGRAM - NO ARG. LIST   S - - X C - 101P0003150
C*                                                                      P0003160
C* LOGIF - 300 LOGICAL IF STATEMENTS                     M - 1 - - - 275P0003170
C*  SMCQ - 411    SUBROUTINE SUBPROGRAM                  S - - - - -  12P0003180
C*                                                                      P0003190
C* BARIF - 301 ARITHMETIC IF STATEMENTS - INTEGER, REAL  M - 1 - - - 175P0003200
C*                                                                      P0003210
C* FARIF - 302 ARITHMETIC IF STATEMENTS - D.P.           M - 1 - - -  99P0003220
C*                                                                      P0003230
C* IOFMT - 310 FORMATTED READ/WRITE -ADDITIONAL FEATURES M I 5 - - - 310P0003240
C*           38 DATA CARDS                               - - - - - -  38P0003250
C*                                                                      P0003260
C* RDFMT - 312 FORMATS IN ARRAYS                         M I 1 - - D 201P0003270
C*  FMTQ - 462    SUBROUTINE SUBPROGRAM                  S - - - - -  33P0003280
C*           13 DATA CARDS                               - - - - - -  13P0003290
C*                                                                      P0003300
C* MISC5 - 350 SPECIFICATIONS FOR PROGRAM FORM           M - 1 - - - 156P0003310
C*                                                                      P0003320
C* FUNMX - 351 BASIC EXTERNAL FUNCTIONS - TRIG FORMULAE  M - 1 - - -  58P0003330
C*                                                                      P0003340
C* NAMES - 352 NAMES RESEMBLE FORTRAN VERBS, FUNCTIONS   M - 1 - - -  79P0003350
C*  MAQQ - 413    SUBROUTINE  (INTRINSIC FUNCTION NAMES  S - - - - -  15P0003360
C*  MBQQ - 463    SUBROUTINE   USED AS VARIABLE NAMES IN S - - - - -  15P0003370
C*  AMQQ - 473    SUBROUTINE   SOME SUBRTS. AND AS       S - - - - D  21P0003380
C*  BMQQ - 483    SUBROUTINE   FUNCTIONS IN OTHERS)      S - - - - -  16P0003390
C*                                                                      P0003400
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C* SPECZ - 360 COMMON, DIMENSION, EQUIVALENCE            M - 1 - / - 169P0003410
C*                                                                      P0003420
C***********************************************************************P0080010
C*****                                                                  P0080020
C*****                       FMTRW - (008)                              P0080030
C*****                                                                  P0080040
C***********************************************************************P0080050
C*****  GENERAL PURPOSE                                         ASA REFSP0080060
C*****    TO TEST SIMPLE FORMAT AND FORMATTED I/O STATEMENTS   7.1.3.2.2P0080070
C*****    SO THAT THESE FEATURES MAY BE USED IN OTHER TEST     7.1.3.2.3P0080080
C*****    PROGRAM SEGMENTS                                     7.2.3    P0080090
C*****  RESTRICTIONS OBSERVED                                           P0080100
C*****  *  ALL FORMAT STATEMENTS ARE LABELED                 7.2.3  /57P0080110
C*****  *  H AND X DESCRIPTORS ARE NEVER REPEATED            7.2.3.3/54P0080120
C*****  *  FOR W.D DESCRIPTORS, D IS ALWAYS SPECIFIED AND    7.2.3.1/31P0080130
C*****     W IS EQUAL TO OR GREATER THAN D                   7.2.3.1/33P0080140
C*****  *  FIELD WIDTH IS NEVER ZERO                         7.2.3  /18P0080150
C*****  *  IF THERE IS AN I/O LIST, THE FORMAT STATEMENT     7.2.3.4/22P0080160
C*****     CONTAINS AT LEAST ONE FIELD DESCRIPTOR (OTHER                P0080170
C*****     THAN H OR X)                                                 P0080180
C*****  *  ITEMS IN I/O LIST CORRESPOND TO FORMAT DESCRIPTORS 7.2.3.4/36P0080190
C*****  *  NEGATIVE OUTPUT VALUES ARE SIGNED                 7.2.3.6/56P0080200
C*****  *  FIELD WIDTH NEVER EXCEEDED BY OUTPUT              7.2.3.6/01P0080210
C*****  *  FOR I CONVERSION, EXTERNAL INPUT FIELDS ARE     7.2.3.6.1/07P0080220
C*****     INTEGER CONSTANTS                                            P0080230
C*****  GENERAL COMMENTS                                                P0080240
C*****    PLUS SIGNS FOR INPUT FIELDS ARE USUALLY OMITTED    7.2.3.6/44P0080250
C*****                                                                  P0080260
C*****                                                                  P0080270
C*****                                                                  P0080280
C*****    FORMATTED WRITES WITHOUT AN I/O LIST (FORMAT     7.1.3.2.3/05P0080290
C*****    STATEMENTS TEST H AND X DESCRIPTORS AND SLASH    7.2.3.2  /44P0080300
C*****    RECORD DIVIDERS)                                  7.2.3.8  /09P0080310
C*****                                                      7.2.3.9  /31P0080320
C  INPUT DATA TO THIS SEGMENT CONSISTS OF 40 CARD IMAGES IN COL. 1 - 80 P0080330
COL.      1----------------------------------------------------------61 P0080340
CARD  1     999                                                         P0080350
CARD  2     555554444                                                   P0080360
CARD  3     666  777777  8                                              P0080370
CARD  4     33333111112222222255555444444444444                         P0080380
CARD  5     7.7123456.7                                                 P0080390
CARD  6     8.889.9997.123456                                           P0080400
CARD  7     5.44446.5555533.133.133.133.1444.1                          P0080410
CARD  8     5555.15555.1  66666.166666.1  44.22                         P0080420
CARD  9     2.12.12.12.12.1666.3334.3334.3334.333                       P0080430
CARD 10   -0.1E+01+0.22E-01 0.333E+02 0.4444E+03-0.55555E-03+0.666666E+ P0080440
COL.    62------------77                                                P0080450
CARD 10 00+0.9876543E+12                                                P0080460
COL.      1----------------------------------------------------------61 P0080470
CARD 11   1.05.522.066.633.123455.0789                                  P0080480
CARD 12   123.00456.88 0.123E+01  +0.987+1 -0.2345+02 -0.6879E+2+0.7E+0 P0080490
COL     62-----70                                                       P0080500
CARD 12 3 0.4E+03                                                       P0080510
COL.      1----------------------------------------------------------61 P0080520
CARD 13    0.9876543E-04+0.1357913E-04                                  P0080530
CARD 14   19.34+0.2468E+02   +.765+287.643.96 0.5407E+0243.96+0.5407E+0 P0080540
COL.    62-------------78                                               P0080550
CARD 14 243.96   0.5407+2                                               P0080560
COL.      1------------------------ ---------------------------------61 P0080570
CARD 15      +0.10+06                                                   P0080580
CARD 16   -0.334D-04   -.334-4 +0.7657654D00 0.12345678901D+10          P0080590
CARD 17    +0.98765432109876D-1+0.98765432109876D-01    .98765432109876 P0080600
COL.    62-66                                                           P0080610
CARD 17 -1                                                              P0080620
COL.      1----------------------------------------------------------61 P0080630
CARD 18    -.555555542D+03  -0.555555542+3                              P0080640
CARD 19   TABC                                                          P0080650
CARD 20   FDEFFGHIT*+T1F$)TF                                            P0080660
CARD 21       9.91.19.92.29.93.39.94.49.91.19.92.29.93.39.94.4                 P0080670
CARD 22     9.95.59.96.69.97.79.98.89.95.59.96.69.97.79.98.8                   P0080680
CARD 23       -9.9-9.9-9.9-9.9                                                 P0080690
CARD 24     -0.99D+01-0.99D+01-0.99D+01-0.99D+01-0.99D+01 -.99D+01   -.99+ P0080700
COL.      62-------72                                                          P0080710
CARD 24 01    -.99+1                                                           P0080720
COL.        1-----------------------------------------------------------61 P0080730
CARD 25     9999999999                                                         P0080740
CARD 26       +0.99D+01 0.99D+01   +.99D01    +.99D1                           P0080750
CARD 27     .9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9         P0080760
CARD 28     TFTFTFTFTF                                                         P0080770
CARD 29       99999999+0.99D+01 0.99D+01 0.99D+01+0.99D+01      .99D1          P0080780
CARD 30     9.95.59.96.69.97.79.98.899999999999999999TFFT9.99.99.99.99.9     P0080790
CARD 31          T   F         T    F                                          P0080800
CARD 32       4444.55555                                                       P0080810
COL.        1-----------------------------------------------------------61 P0080820
CARD 33     123.45678E2  1234.5678  123.45678  12.345678  1.2345678  .123 P0080830
COL.      62-66                                                                P0080840
CARD 33 45678                                                                  P0080850
COL.        1-----------------------------------------------------------61 P0080860
CARD 34      9876.5498.7654E2 9876.54   987.654864786D-486.4786E286.4786  P0080870
COL.      62---------------80                                                  P0080880
CARD 34   8657.86D0  9876.54                                                   P0080890
COL.        1-----------------------------------------------------------61 P0080900
CARD 35      9.8765598.7654E2  9876.54  987.654864786D-386.4786E286.4786  P0080910
COL.      62---------------80                                                  P0080920
CARD 35   8657.86D0  9876.54                                                   P0080930
COL.        1-----------------------------------------------------------61 P0080940
CARD 36     122333544888611222                                                 P0080950
CARD 37     455666233444966111                                                 P0080960
CARD 38     788999377555899777                                                 P0080970
CARD 39     11112 334 559 880 11                                               P0080980
CARD 40     6 778 995 441 222 00                                               P0080990
C*****                                                                         P0081000
C*****  S P E C I F I C A T I O N S  SEGMENT 008                               P0081010
C*****                                                                         P0010010
C*****  WHEN EXECUTING ONLY SEGMENT 008, THE SPECIFICATION STATEMENTS           P0010015
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C= IN COLUMNS                    P0010020
C*****  1 AND 2 REMOVED                                                         P0010025
C=     DIMENSION A1S(5),A2S(2,2)   ,EP1S(33),CMA1S(5),A3S(3,3,3)              P0010030
C=    1,IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),MCA1I(5)                        P0010035
C=     INTEGER I2I(2,2),I3I(2,2,2),MCA3I(2,3,3)                                 P0010040
C=     LOGICAL MCA1B(7),A1B(2),A2B(2,2),A3B(2,2,2),AVB,CVB,DVB ,MCBVB          P0010045
C=     DOUBLE PRECISION DPA1D(5),MCA3D(1,4,2),ZZDVD ,A2D(2,2),A3D(2,2,2) P0010050
C=    1,AC1D(10),BC2D(7,4),DPAVD,DPBVD                                         P0010055
C=     COMPLEX BVC,QAVC,CHAVC,CHBVC,CHCVC,CHDVC                                 P0010060
C=    1,LL1C(32),LM2C(8,4),A1C(12),A2C(2,2),B3C(2,2,2),B1C(8)                  P0010065
C*****                                                                         P0010070
       DIMENSION A1S(5),A2S(2,2)   ,EP1S(33),CMA1S(5),A3S(3,3,3)              P008A1
      1,IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),MCA1I(5)                        P008A2
       INTEGER I2I(2,2),I3I(2,2,2),MCA3I(2,3,3)                                 P008A3
       LOGICAL MCA1B(7),A1B(2),A2B(2,2),A3B(2,2,2),AVB,CVB,DVB ,MCBVB          P008A4
       DOUBLE PRECISION DPA1D(5),MCA3D(1,4,2),ZZDVD ,A2D(2,2),A3D(2,2,2) P008A5
      1,AC1D(10),BC2D(7,4),DPAVD,DPBVD                                         P008A6
       COMPLEX BVC,QAVC,CHAVC,CHBVC,CHCVC,CHDVC                                 P008A7
      1,LL1C(32),LM2C(8,4),A1C(12),A2C(2,2),B3C(2,2,2),B1C(8)                  P008A8
C*****  I N P U T - O U T P U T  TAPE  ASSIGNMENT STATEMENTS                   P0081020
C*****                                                                         P0081030
C*****  WHEN EXECUTING ONLY SEGMENT 008, THE FOLLOWING STATEMENTS               P0070010
C*****  NUVI=6 AND IRVI=5 MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.         P0070015
C*****                                                                         P0070020
C=     IRVI = 5                                                                 P0070025
C=     NUVI = 6                                                                 P0070030
       IRVI = 5                                                                 P008B1
       NUVI = 6                                                                 P008B2
C*****  IDENTIFY THE SOURCE OF THE TEST PROGRAMS                                P0070035
       WRITE(NUVI,0071)                                                         P0070040
0071   FORMAT (41H1 F O R T R A N  T E S T  P R O G R A M S//                   P0070045
     1 42H  PREPARED BY NATIONAL BUREAU OF STANDARDS//                  P0070050
     3 38H  FOR USE ON FORTRAN PROCESSORS       //                      P0070055
     4 42H  IN ACCORDANCE WITH ASA FORTRAN X3.9-1966//                  P0070060
     5 23H  VERSION 1            ///)                                   P0070065
C*****  3 OF 6 INPUT CARDS IDENTIFY THE USERS SYSTEM AND COMPILER       P0070070
C       PREPARED BY USER                                                P0070075
C       READ, NO LIST                                                   P0070080
C       PREPARED BY USER                                                P0070085
C       READ, NO LIST                                                   P0070090
C       PREPARED BY USER                                                P0070095
C       READ, NO LIST                                                   P0070100
      READ(IRVI,0070)                                                   P0070105
      READ(IRVI,0072)                                                   P0070110
      READ(IRVI,0073)                                                   P0070115
0070  FORMAT(40H   BASED ON ASA FORTRAN X3.9-1966       /)              P0070120
0072  FORMAT(40H   TEST PROGRAMS                        /)              P0070125
0073  FORMAT(40H   FORTRAN COMPILER                     /)              P0070130
      WRITE(NUVI,0070)                                                  P0070135
      WRITE(NUVI,0072)                                                  P0070140
      WRITE(NUVI,0073)                                                  P0070145
C*****    HEADER FORMAT STATEMENT                                       P0081040
0080  FORMAT (1H1, 1X,27HFMTRW - (008) FORMATTED I/O//2X,               P0081050
     138HASA REFS - 7.1.3.2.2  7.1.3.2.3  7.2.3//2X,7HRESULTS)          P0081060
      WRITE (NUVI,0080)                                                 P0081070
C*****    FORMAT WITH DIGITS 0-9 IN H FIELDS                            P0081080
0081  FORMAT (//22H  10101010101010101010,9H999999999,8H88888888/2X,    P0081090
     17H7777777,6H666666,5H55555,4H4444,3H333,2H22,1H1)                 P0081100
      WRITE (NUVI,0081)                                                 P0081110
C*****    FORMAT  CONTAINING ALL LETTERS (A-Z) IN H FIELDS AND          P0081120
C*****    A VARIABLE NUMBER OF BLANKS IN H AND X FIELDS                 P0081130
0082  FORMAT(/2X,3HAAA,5X,5H     ,3HBBB,10X,3HCCC/3H   ,3HDDD,9X,3HEEE, P0081140
     19H         ,3HFFF/4X,3HGGG,8X,3HHHH,8H        ,3HIII/5H     ,3HJJJP0081150
     2,7H       ,3HKKK,7X,3HLLL/6X,3HMMM,6X,3HNNN,6H      ,3HOOO/7X,    P0081160
     3 3HPPP,5H     ,3HQQQ,5X,3HRRR/8X,3HSSS,4X,3HTTT,4H    ,3HUUU/    1P0081170
     45H         VVV   ,3HWWW,3X,3HXXX/12X,3HYYY,3X,3HZZZ)              P0081180
      WRITE (NUVI,0082)                                                 P0081190
C*****    FORMAT CONTAINING H FIELD WITH ALL POSSIBLE                   P0081200
C*****    SPECIAL CHARACTERS                                      3.1/46P0081210
0083  FORMAT(/21H  = + - * / ( ) , . $)                                 P0081220
      WRITE (NUVI,0083)                                                 P0081230
C*****    FORMAT  TO TEST VERTICAL SPACING                              P0081240
C*****                                                        7.1.3.4/04P0081250
7154  FORMAT(/24H  BEGIN VERTICAL SPACING//30H  FORMAT(14H   SKIP 1 LINEP0081260
     1  /) /)                                                           P0081270
      WRITE (NUVI, 7154)                                                P0081280
7155  FORMAT(32H  FORMAT(15H   SKIP 2 LINES  //) //)                    P0081290
      WRITE (NUVI, 7155)                                                P0081300
7156  FORMAT(33H  FORMAT(16H   SKIP 3 LINES  ///) ///)                  P0081310
      WRITE (NUVI,7156)                                                 P0081320
0084  FORMAT( 32H  IMBEDDED SLASHES - SKIP 1 LINE //                    P0081330
     1  14H  SKIP 2 LINES///  14H  SKIP 3 LINES/ 3(/),                  P0081340
     2  19H  SKIP TO NEXT LINE/ 1H , 12H SKIP 1 LINE/ 1H0,              P0081350
     38H TEST NO/1H+,9X,14H/1H+,7HADVANCE/19H  SKIP TO NEW PAGE /       P0081360
     4  1H1,               /// 30H  END OF VERTICAL SPACING TEST)       P0081370
      WRITE (NUVI,0084)                                                 P0081380
C*****    FORMATTED READ AND WRITE STATEMENTS WITH INTEGER  7.1.3.2.1/25P0081390
C*****    VARIABLES AND ARRAY ELEMENTS IN AN I/O LIST. (THE   7.2.3.3/01P0081400
C*****    NUMBER OF ITEMS IN THE LIST IS VARIABLE.) SOME                P0081410
C*****    FORMAT STATEMENTS CONTAIN REPEATED FIELDS.                    P0081420
C*****    FORMATS CONTAINING I CONVERSION DESCRIPTORS.      7.2.3.6.1/03P0081430
C*****    FIELDS WIDTH IS FROM 1 TO 5 DIGITS.  SOME         7.2.3.3  /01P0081440
C*****    FIELDS ARE REPEATED                                           P0081450
0085  FORMAT (//25H  BEGIN I CONVERSION TEST/40H  EACH PAIR OF LINES SHOP0081460
     1ULD BE IDENTICAL/47H  LINE 1 OF EACH GROUP IS HOLLERITH INFORMATIOP0081470
     2N)                                                                P0081480
      WRITE (NUVI,0085)                                                 P0081490
C*****  INPUT CARD   1                                                  P0081500
0086  FORMAT (2X,I3)                                                    P0081510
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      READ (IRVI,0086) JACVI                                            P0081520
C*****  INPUT CARD   2                                                  P0081530
0087  FORMAT  ( 1X, I5, 1X,I4)                                          P0081540
      READ (IRVI,0087) KBCVI, IAC1I(1)                                  P0081550
C*****  INPUT CARD   3                                                  P0081560
0088  FORMAT (2X,I3,2X,3(I2),2X,I1)                                     P0081570
      READ (IRVI,0088) IAC2I(1,2), LCCVI, IAC1I(5), IHDVI, MCA3I(1,2,3) P0081580
C*****  INPUT CARD   4                                                  P0081590
0089  FORMAT (2X,2(I3),1(I5),4(I2),5(I1),3(I4))                         P0081600
      READ (IRVI,0089) MDCVI, IAC2I(2,2), IAC1I(4), NECVI, IAC1I(3),    P0081610
     1     IAC2I(2,3), IAC2I(2,1), MRRVI, IGDVI, KGVI, IEDVI, IAC2I(1,1)P0081620
     2     ,IAC1I(2), IAC2I(2,7), MCA3I(2,1,3)                          P0081630
7086  FORMAT (/  5H  999)                                               P0081640
      WRITE (NUVI,7086)                                                 P0081650
      WRITE (NUVI,0086) JACVI                                           P0081660
7087  FORMAT (/ 11H  5555 4444)                                         P0081670
      WRITE (NUVI,7087)                                                 P0081680
      WRITE (NUVI,0087) KBCVI, IAC1I(1)                                 P0081690
7088  FORMAT (/ 16H  666  777777  8)                                    P0081700
      WRITE (NUVI,7088)                                                 P0081710
      WRITE (NUVI,0088) IAC2I(1,2), LCCVI, IAC1I(5), IHDVI, MCA3I(1,2,3)P0081720
7089  FORMAT (/ 38H  33333311111222222225555544444444444444)            P0081730
      WRITE (NUVI,7089)                                                 P0081740
      WRITE (NUVI,0089) MDCVI, IAC2I(2,2), IAC1I(4), NECVI, IAC1I(3),   P0081750
     1     IAC2I(2,3), IAC2I(2,1), MRRVI, IGDVI, KGVI, IEDVI, IAC2I(1,1)P0081760
     2     ,IAC1I(2), IAC2I(2,7), MCA3I(2,1,3)                          P0081770
C*****    FORMATTED READ AND WRITE STATEMENTS WITH REAL       7.1.3.2.1/25P0081780
C*****    VARIABLES AND ARRAY ELEMENTS IN AN I/O LIST.(THE    7.2.3.6.2/18P0081790
C*****    NUMBER OF ITEMS IN THE LIST IS VARIABLE.) ONLY      7.2.3.3   /01P0081800
C*****    F CONVERSION IS USED IN THE FORMAT STATEMENTS.                P0081810
C*****    SOME F FIELD DESCRIPTORS ARE REPEATED. FIELD                  P0081820
C*****    WIDTH ALWAYS CONTAINS 1 POSITION FOR DECIMAL PT.              P0081830
C*****    FORMATS CONTAINING F CONVERSION DESCRIPTORS.        7.2.3.6.2/18P0081840
C*****    FIELD WIDTH IS FROM 1 TO 7 DIGITS. PLACEMENT OF     7.2.3.3   /01P0081850
C*****    DECIMAL POINT IS VARIABLE. SOME F FIELDS ARE                  P0081860
C*****    REPEATED                                                      P0081870
7080  FORMAT (/ 25H  BEGIN F CONVERSION TEST/40H  EACH PAIR OF LINES SHOP0081880
     1ULD BE IDENTICAL)                                                 P0081890
      WRITE (NUVI,7080)                                                 P0081900
C*****  INPUT CARD   5                                                  P0081910
7081  FORMAT (2X,F3.1,F8.1)                                             P0081920
      READ (IRVI,7081) ACVS, CMAVS                                      P0081930
C*****  INPUT CARD   6                                                  P0081940
7082  FORMAT(2X,F4.2,F5.3,F8.6)                                         P0081950
      READ (IRVI,7082) A1S(2), BCVS, CMBVS                              P0081960
C*****  INPUT CARD   7                                                  P0081970
7083  FORMAT (2X,F6.4,F7.5,4(F4.1),F5.1)                                P0081980
      READ (IRVI,7083) HHCVS, CMCVS, GGCVS, FFCVS, A1S(1), AC1S(25),    P0081990
     1    AC2S(4,1)                                                     P0082000
C*****  INPUT CARD   8                                                  P0082010
7084  FORMAT (2X,2(F6.1),2X,2(F7.1),2X,F5.2)                            P0082020
      READ (IRVI,7084) AC1S(18), AC1S(7), AC2S(4,4) , AC1S(8), AC1S(10) P0082030
C*****  INPUT CARD   9                                                  P0082040
7085  FORMAT (2X,5(F3.1),F7.3,3(F5.3))                                  P0082050
      READ (IRVI,7085) AC2S(3,3) , AC2S(5,1), CCVS, AC1S(12), DCVS,     P0082060
     1    AC1S(13), AC1S(5), A3S(1,1,2), AC2S(3,5)                      P0082070
7091  FORMAT (/ 13H  7.7123456.7)                                       P0082080
      WRITE (NUVI,7091)                                                 P0082090
      WRITE (NUVI,7081) ACVS, CMAVS                                     P0082100
7092  FORMAT (/ 19H  8.889.9997.123456)                                 P0082110
      WRITE (NUVI,7092)                                                 P0082120
      WRITE (NUVI,7082) A1S(2), BCVS, CMBVS                             P0082130
7093  FORMAT (/ 36H  5.44446.5555533.133.133.133.1444.1)                P0082140
      WRITE (NUVI,7093)                                                 P0082150
      WRITE (NUVI,7083) HHCVS, CMCVS, GGCVS, FFCVS, A1S(1), AC1S(25)    P0082160
     1    ,AC2S(4,1)                                                    P0082170
7094  FORMAT (/ 37H  5555.15555.1  66666.166666.1  44.22 )              P0082180
      WRITE (NUVI,7094)                                                 P0082190
      WRITE (NUVI,7084) AC1S(18), AC1S(7), AC2S(4,4) , AC1S(8), AC1S(10)P00822
7095  FORMAT ( /39H  2.12.12.12.12.1666.3334.3334.3334.333)             P00822
      WRITE (NUVI,7095)                                                 P00822
      WRITE (NUVI,7085) AC2S(3,3) , AC2S(5,1), CCVS, AC1S(12), DCVS,    P00822
     1    AC1S(13), AC1S(5),  A3S(1,1,2), AC2S(3,5)                     P00822
C*****    FORMATTED READ AND WRITE STATEMENTS WITH REAL      7.1.3.2.1/  P00822
C*****     VARIABLES AND ARRAY ELEMENTS IN AN I/O LIST.      7.2.3.6.2/  P00822
C*****     E CONVERSION IS USED IN THE FORMAT STATEMENTS     7.2.3.3  /  P00822
C*****     SOME E FIELD DESCRIPTORS ARE REPEATED                       P00822
C*****    (FIELD WIDTH ALWAYS INCLUDES 6 EXTRA POSITIONS  7.2.3.6.2.1/47P00822
C*****    TO PROVIDE FOR SIGN, DECIMAL POINT AND EXPONENT.    7.2.3.6/01P00823
C*****    PROVISION IS ALWAYS MADE FOR THE DIGIT ZERO     7.2.3.6.2.1/04P00823
C*****    BEFORE THE DECIMAL POINT)                                     P00823
C*****    THE NUMBER OF DECIMAL PLACES VARIES FROM 1                    P00823
C*****    TO 7 DIGITS.                                                  P00823
7110  FORMAT (//25H  BEGIN E CONVERSION TEST/40H  EACH PAIR OF LINES SHOP00823
     1ULD BE IDENTICAL)                                                 P00823
      WRITE (NUVI,7110)                                                 P00823
C*****  INPUT CARD  10                                                  P00823
7111  FORMAT (E8.1,E9.2,E10.3,E11.4,E12.5,E13.6,E14.7)                  P00823
      READ (IRVI,7111) AVS, BVS, EP1S(5), AC2S(1,5), CVS, AC2S(5,4),    P00824
     1      A3S(2,1,2)                                                  P00824
7112  FORMAT (/ 21H  -0.1E+01   0.22E-01/2X,E8.1,2X,E9.2//              P00824
     1        25H   0.333E+02   0.4444E+03/2X,E10.3,2X,E11.4//          P00824
     2        29H  -0.55555E-03   0.666666E+00/2X,E12.5,2X,E13.6//      P00824
     3        16H   0.9876543E+12/2X,E14.7)                             P00824
      WRITE (NUVI,7112) AVS, BVS, EP1S(5), AC2S(1,5), CVS, AC2S(5,4),   P00824
     1      A3S(2,1,2)                                                  P00824
C*****    FORMATTED READ AND WRITE STATEMENTS WITH COMPLEX  7.1.3.2.1/25P00824
C*****    VARIABLES AND ARRAY ELEMAENTS IN AN I/O LIST.     7.2.3.6.4/52P00824
C*****    E AND F CONVERSION ARE USED IN THE FORMAT         7.2.3.4  /39P00825
C*****    STATEMENTS. SOME FORMAT DESCRIPTORS ARE REPEATED  7.2.3.3  /01P00825
7118  FORMAT (  31H1 BEGIN COMPLEX CONVERSION TEST/32H  EACH GROUP SHOULP00825
     1D BE IDENTICAL)                                                   P00825
      WRITE (NUVI,7118)                                                 P00825
C*****  INPUT CARD  11                                                  P00825
7119  FORMAT ( 2(F3.1) , 2(F4.1), 2(F7.4))                              P00825
      READ (IRVI,7119) CHAVC, CHBVC, A1C(2)                             P00825
C*****  INPUT CARDS 12, 13                                              P00825
7120  FORMAT ( 2(F6.2), 2(E10.3), 2(E11.4), 2(E8.1)/ 2(E14.7))          P00825
      READ (IRVI,7120) A2C(1,2), B3C(2,2,1), CHCVC, A1C(1), CHDVC       P00826
C*****  INPUT CARD  14                                                  P00826
7122  FORMAT (F5.2, E11.4, E10.3, F4.1, 3(F5.2,E11.4))                  P00826
      READ (IRVI,7122) A2C(2,1), BVC, QAVC, LM2C(1,2), LL1C(2)          P00826
7123  FORMAT (/ 10H  1.0  5.5/ 2X, F3.1,2X, F3.1 //                     P00826
     1 12H  22.0  66.6/ 2X, F4.1, 2X, F4.1 //                           P00826
     2 18H  33.1234  55.0789/ 2X, F7.4, 2X, F7.4 )                      P00826
      WRITE (NUVI,7123) CHAVC, CHBVC, A1C(2)                            P00826
7124  FORMAT (/  16H  123.00  456.88/ 2X, F6.2, 2X, F6.2 //             P00826
     1 24H   0.123E+01   0.987E+01/ 2X, E10.3, 2X, E10.3 //             P00826
     2 26H  -0.2345E+02  -0.6879E+02/ 2X, E11.4, 2X, E11.4 //           P00827
     3 20H   0.7E+03   0.4E+03/ 2X, E8.1, 2X, E8.1 //                   P00827
     4 32H   0.9876543E-04   0.1357913E-04/ 2X, E14.7, 2X, E14.7)       P00827
      WRITE (NUVI,7124) A2C(1,2), B3C(2,2,1), CHCVC, A1C(1), CHDVC      P00827
7126  FORMAT (/ 20H  19.34   0.2468E+02/ 2X, F5.2, 2X, E11.4//          P00827
     1 18H   0.765E+02  87.6/ 2X, E10.3, 2X,F4.1//                      P00827
     2 18H  43.96 0.5407E+02/     3(F7.2,E11.4/))                       P00827
      WRITE (NUVI,7126) A2C(2,1), BVC, QAVC, LM2C(1,2), LL1C(2)         P00827
C*****     ORMATTED READ AND WRITE STATEMENTS WITH          7.1.3.2.1/25P00827
C*****        BLE PRECISION VARIABLES IN AN I/O LIST.       7.2.3.6.3/41P00827
C*****    D CONVERSION IS USED IN THE FORMAT STATEMENTS.    7.2.3.3  /01P00828
C*****    SOME D FORMAT DESCRIPTORS ARE REPEATED. (FIELD                P00828
C*****    WIDTH ALWAYS INCLUDES 6 EXTRA POSITIONS TO      7.2.3.6.2.1/45P00828
C***      PROVIDE FOR SIGN, DECIMAL POINT AND EXPONENT    7.2.3.6    /04P00828
C*****    AND 1 POSITION FOR OPTIONAL DIGIT ZERO BEFORE   7.2.3.6.2.1/04P00828
C*****    THE DECIMAL POINT)                                            P00828
7127  FORMAT ( /25H  BEGIN D CONVERSION TEST/32H  EACH GROUP SHOULD BE IP00828
     1DENTICAL)                                                         P00828
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      WRITE (NUVI,7127)                                                 P0082880
C*****  INPUT CARD  15                                                  P0082890
7128  FORMAT ( 2X, D8.1)                                                P0082900
      READ (IRVI,7128) DPAVD                                            P0082910
C*****  INPUT CARDS  16, 17, 18                                         P0082920
7129  FORMAT ( 2(D10.3), D14.7, D18.11/ 3(D21.14)/ 2(D16.9))            P0082930
      READ (IRVI,7129) MCA3D(1,2,2), AC1D(2), BC2D(3,1), AC1D(1),       P0082940
     1      ZZDVD, AC1D(3), DPBVD, MCA3D(1,2,1), BC2D(1,2)              P0082950
7130  FORMAT (/ 10H   0.1D+06)                                          P0082960
      WRITE (NUVI,7130)                                                 P0082970
      WRITE (NUVI,7128) DPAVD                                           P0082980
7131  FORMAT (/ 12H  -0.334D-04/ 2X, D10.3 / 2X, D10.3 //               P0082990
     1 16H   0.7657654D+00/ 2X, D14.7 //                                P0083000
     2 20H1  0.12345678901D+10/ 2X, D18.11 //                           P0083010
     3 23H   0.98765432109876D-01/ 2X, D21.14/ 2X, D21.14 / 2X, D21.14//P0083020
     4 18H  -0.555555542D+03/ 2X, D16.9/ 2X, D16.9 )                    P0083030
      WRITE (NUVI,7131) MCA3D(1,2,2), AC1D(2), BC2D(3,1), AC1D(1)       P0083040
     1      ZZDVD, AC1D(3), DPBVD, MCA3D(1,2,1), BC2D(1,2)              P0083050
C*****    FORMATTED READ AND WRITE STATEMENTS WITH LOGICAL  7.1.3.2.1/25P0083060
C*****    VARIABLES AND ARRAY ELEMENTS IN AN I/O LIST       7.2.3.7  /56P0083070
C*****    SOME L DESCRIPTORS ARE REPEATED.                              P0083080
7132  FORMAT(//25H  BEGIN L CONVERSION TEST/33H  LINES BELOW SHOULD BE IP0083090
     1DENTICAL)                                                         P0083100
C*****    L CONVERSION IS USED IN THE FORMAT STATEMENTS     7.2.3.3  /01P0083110
      WRITE (NUVI,7132)                                                 P0083120
C*****  INPUT CARD   19                                                 P0083130
7133  FORMAT (L4)                                                       P0083140
      READ (IRVI,7133) A2B(2,1)                                         P0083150
C*****  INPUT CARD   20                                                 P0083160
7134  FORMAT ( 2(L4), L3, L2, L3, 2(L1))                                P0083170
      READ (IRVI,7134) MCA1B(1), MCBVB, A2B(1,1), A3B(1,1,1), CVB,      P0083180
     1      DVB, A3B(1,2,1)                                             P0083190
7135  FORMAT (//24H     T   F   F  T T  FTF/ 2X, 3(L4), L3, L2, L3,     P0083200
     1  2(L1))                                                          P0083210
      WRITE (NUVI,7135) A2B(2,1), MCA1B(1), MCBVB, A2B(1,1), A3B(1,1,1),P0083220
     1      CVB, DVB, A3B(1,2,1)                                        P0083230
C*****    FORMATTED READ AND WRITE STATEMENTS WITH ARRAY    7.1.3.2.1/26P0083240
C*****    NAMES OF ALL TYPES IN AN I/O LIST. THE NUMBER OF  7.1.3.2.1/39P0083250
C*****    ITEMS IN THE LIST IS VARIABLE. SOME FIELD         7.2.3.3  /01P0083260
C*****    DESCRIPTORS ARE REPEATED.                                     P0083270
7097  FORMAT (//32H  TEST UNSUBSCRIPTED ARRAY NAMES/35H  IN I/O LISTS. EP0083280
     1ACH GROUP OF LINES/22H  SHOULD BE IDENTICAL.)                     P0083290
      WRITE (NUVI,7097)                                                 P0083300
C*****  INPUT CARDS  21, 22                                             P0083310
7098  FORMAT(2X,8(F3.1),8F3.1/8(2(F3.1)))                               P0083320
      READ (IRVI,7098) B1C,B3C                                          P0083330
C*****  INPUT CARDS  23, 24, 25                                         P0083340
7099  FORMAT(2X,4(F4.1)/4(D9.2),4D9.2/5(I2))                            P0083350
      READ (IRVI,7099) A2S, A3D, MCA1I                                  P0083360
C*****  INPUT CARDS  26, 27, 28                                         P0083370
7100  FORMAT(2X,4(D9.2)/27(F2.1)/5(L1),5L1)                             P0083380
      READ (IRVI,7100) A2D, A3S, A1B, A3B                               P0083390
C*****  INPUT CARDS  29, 30                                             P0083400
7101  FORMAT (2X,4(I2),5(D9.2)/4(2(F3.1)),8(I2),4(L1),5(F3.1))          P0083410
      READ (IRVI,7101) I2I, DPA1D, A2C, I3I, A2B, CMA1S                 P0083420
7102  FORMAT (/ 26H  9.91.19.92.29.93.39.94.4 / 2X,8(F3.1)/2X,8(F3.1))   P0083430
      WRITE (NUVI,7102) B1C                                             P0083440
7103  FORMAT (/ 18H  -9.9-9.9-9.9-9.9/2X,4(F4.1) //                     P0083450
     138H  -0.99D+01-0.99D+01-0.99D+01-0.99D+01/2X,4(D9.2)/2X,4(D9.2)// P0083460
     2 12H  9999999999/ 2X, 5(I2) //38H   0.99D+01 0.99D+01 0.99D+01 0.9P0083470
     39D+01/ 2X, 4(D9.2) // 37H  0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9 0.9/1X,P0083480
     4  9(F4.1)/ 1X, 9(F4.1)/ 1X,9(F4.1)/  4H1 TF/ 2X,2(L1))            P0083490
      WRITE (NUVI,7103) A2S, A3D, MCA1I, A2D, A3S, A1B                  P0083500
7104  FORMAT (/  10H  TFTFTFTF/  2X, 8(L1) // 10H  99999999/ 2X, 4(I2)//P0083510
     1 11H   0.99D+01/ 5(D11.2/)     /26H  9.95.59.96.69.97.79.98.8/2X, P0083520
     28(F3.1)/2X,8(F3.1)/2X,8(F3.1)//18H  9999999999999999/2X,8(I2)//   P0083530
     3  6H  TFFT/ 2X, 4(L1) // 17H  9.99.99.99.99.9/2X, 5(F3.1))       P0083540
      WRITE (NUVI,7104) A3B, I2I, DPA1D, A2C, B3C, I3I, A2B, CMA1S      P0083550
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C*****    FORMATTED WRITES TO TEST THAT LEADING BLANKS        7.2.3.6/51P0083560
C*****    ARE INSERTED IN THE OUTPUT FIELD WHEN THE OUTPUT              P0083570
C*****    PRODUCED IS SMALLER THAN THE FIELD WIDTH. (I, E,              P0083580
C*****    F AND D DESCRIPTORS ARE TESTED)                               P0083590
7090  FORMAT ( /30H  LEADING BLANK INSERTION TEST/40H  EACH PAIR OF LINEP0083600
     1S SHOULD BE IDENTICAL)                                            P0083610
      WRITE (NUVI,7090)                                                 P0083620
7096  FORMAT (/  3H  8/I3//4H  22/I4//5H   22/I5//6H    22/I6//         P0083630
     1 7H     22/I7// 5H  7.7/F5.1// 7H   8.88/F7.2/  9H1   9.999/      P0083640
     2  F9.3// 11H     5.4444/F11.4//  13H      6.55555/F13.5//         P0083650
     3 15H       7.123456/F15.6// 10H  0.21E+01/E10.2//                 P0083660
     4 12H   0.331E+02/E12.3// 14H    0.4441E+03/E14.4//                P0083670
     5 16H     0.55551E+04/E16.5// 18H      0.666661E+05/E18.6//        P0083680
     6 20H       0.1234567E+06/E20.7)                                   P0083690
      WRITE (NUVI,7096) MCA3I(1,2,3), IAC1I(3), NECVI, IAC1I(3),        P0083700
     1     IAC2I(2,3), ACVS, A1S(2), BCVS, HHCVS, CMCVS, CMBVS,         P0083710
     2     DCVS, AC1S(25), AC2S(4,1), AC1S(7), AC1S(8), CMAVS           P0083720
7105  FORMAT (/  9H  0.1D+00/D9.1// 10H   0.1D+00/D10.1//               P0083730
     1 11H    0.1D+00/D11.1// 12H     0.1D+00/D12.1//                   P0083740
     2 10H  1.0  5.5/ 2(F5.1) // 12H   9.9   5.5/ 2(F6.1) //            P0083750
     3 14H    9.9    5.5/ 2(F7.1) // 16H     1.0     5.5/ 2(F8.1))      P0083760
      WRITE (NUVI,7105) AC1D(3), ZZDVD, ZZDVD,                          P0083770
     1     ZZDVD, CHAVC, B3C(1,1,1), B3C(1,1,1), CHAVC                  P0083780
C*****    FORMATTED READ AND WRITE STATEMENT TO TEST THAT    7.2.3.7/03P0083790
C*****    OPTIONAL BLANKS MAY PRECEDE A LOGICAL INPUT FIELD  7.2.3.7/06P0083800
7138  FORMAT (  33H1 TEST LOGICAL FIELDS WITH BLANKS/33H  LINES BELOW SHP0083810
     1OULD BE IDENTICAL)                                                P0083820
      WRITE (NUVI,7138)                                                 P0083830
C*****  INPUT CARD   31                                                 P0083840
7139  FORMAT ( L6, L4, L10, L5)                                         P0083850
      READ (IRVI,7139) AVB, MCA1B(2), A2B(1,2), A3B(2,1,2)              P0083860
7140  FORMAT (//27H       T   F         T    F/ 2X, L6, L4, L10, L5)    P0083870
      WRITE (NUVI,7140) AVB, MCA1B(2), A2B(1,2), A3B(2,1,2)             P0083880
C*****    FORMATTED READ AND WRITE TO TEST F DESCRIPTORS      7.2.3.1/31P0083890
C*****    WHERE D IS EQUAL TO ZERO AND WHERE W EQUALS D       7.2.3.4/40P0083900
C*****    (2ND TEST APPLIES ONLY TO READ STMNTS.)                       P0083910
7108  FORMAT (//36H  TEST D = 0, W=D+1  (PAIRS OF LINES/ 28H  BELOW SHOUP0083920
     1LD BE IDENTICAL))                                                 P0083930
      WRITE (NUVI,7108)                                                 P0083940
C*****  INPUT CARD   32                                                 P0083950
7141  FORMAT (2X, F5.0, F5.5)                                           P0083960
      READ (IRVI,7141) ACVS, BVS                                        P0083970
7109  FORMAT (//7H  4444./2X, F5.0// 9H   .55555/ 3X,F6.5)              P0083980
      WRITE (NUVI,7109) ACVS, BVS                                       P0083990
C*****    FORMATS WITH G CONVERSIONS                                    P0084000
C*****  INPUT CARD   33                                                 P0084010
7142  FORMAT(  3(G11.4), 3G11.4)                                        P0084020
      READ (IRVI,7142) AC1S(14), AC1S(15), AC1S(16), AC1S(17)           P0084030
     1                 AC1S(21), AC1S(22)                               P0084040
7143  FORMAT(/ 2X,23HBEGIN G CONVERSION     /2X,38HEACH PAIR OF LINES SHP0084050
     1OULD BE IDENTICAL//36H     .1235E+05      1235.      123.5/       P0084060
     2  G14.4,4X,2G11.4///3X,33H   12.35          1.235     .1235/      P0084070
     3  G14.4,4X,2G11.4)                                                P0084080
      WRITE(NUVI,7143) AC1S(14), AC1S(15), AC1S(16), AC1S(17),          P0084090
     1                 AC1S(21), AC1S(22)                               P0084100
C*****    SCALE FACTOR APPLIED TO F,E,D,G DESCRIPTORS                   P0084110
C*****    ON READ, BUT NOT ON WRITE                                     P0084120
C*****  INPUT CARD   34                                                 P0084130
7144  FORMAT(2PF8.3,-2PE9.4,F9.4,0PG9.4,D9.4,-2PE9.4,F9.4,D9.4,2PG9.4)  P0084140
      READ(IRVI,7144)EP1S(16),EP1S(17),EP1S(18), EP1S(19),              P0084150
     1   BC2D(1,4),EP1S(20),EP1S(22),BC2D(2,1),EP1S(23)                 P0084160
7145  FORMAT(22H1 SCALE FACTOR ON READ/31H  IN ORDER OF FORMAT OCCURRENCP0084170
     1E//40H  CARD   9876.54   98.7654E2     9876.54/                   P0084180
     2  40H  DESC    2PF8.3     -2PE9.4        F9.4/                    P0084190
     3  40H  TO BE  98.7654   .9877E+04   987654.00/                    P0084200
     4  4H  IS, F12.4, E12.4, F12.2//                                   P0084210
     5  40H  CARD   987.654   864786D-4   86.4786E2/                    P0084220
     6  40H  DESC    0PG9.4        D9.4     -2PE9.4/                    P0084230
     7  40H  TO BE  987.654   .8648D-02   .8648E+04/                    P0084240
     8  4H  IS, F12.3,D12.4, E12.4//                                    P0084250
     9  40H  CARD    86.4786  8657.87D0     9876.54/                    P0084260
     A  40H  DESC      F9.4        D9.4      2PG9.4/                    P0084270
     B  40H  TO BE 8647.860   .8658D+04       98.77/                    P0084280
     C4H  IS,F12.3, D12.4, G16.4)                                       P0084290
      WRITE(NUVI,7145) EP1S(16),EP1S(17),EP1S(18),EP1S(19),             P0084300
     1   BC2D(1,4),EP1S(20),EP1S(22),BC2D(2,1),EP1S(23)                 P0084310
C*****     SCALE FACTOR APPLIED TO  F, E, D, G  DESCRIPTORS             P0084320
C*****     ON WRITE, BUT, NOT ON READ                                   P0084330
C*****   INPUT CARD   35                                               P0084340
7152  FORMAT(F8.2,E9.4,F9.2,G9.3,D9.0,E9.4,F9.4,D9.2,G9.4)              P0084350
      READ(IRVI,7152) AC1S(1),AC1S(2),AC1S(3),AC1S(4),                  P0084360
     1  AC1D(4),AC1S(20),AC1S(23),AC1D(5),AC1S(24)                      P0084370
7153  FORMAT(/23H  SCALE FACTOR ON WRITE/31H  IN ORDER OF FORMAT OCCURREP0084380
     1NCE//40H  CARD   9.87655   98.7654E2     9876.54/                 P0084390
     2  40H  DESC   2PF12.2    -2PE12.4       F12.4/                    P0084400
     3  40H  TO BE   987.65   .0099E+06     98.7654/                    P0084410
     4  4H  IS, 2PF12.2, -2PE12.4,F12.4//                               P0084420
     5  40H  CARD   987.654   864786D-3   86.4786E2/                    P0084430
     6  40H  DESC   1PG12.2       D12.4    -2PE12.4/                    P0084440
     7  40H  TO BE 9.88E+02  8.6479D+02   .0086E+06/                    P0084450
     8   4H  IS, 1PG12.2, D12.4,  -2PE12.4//                            P0084460
     9  40H  CARD   86.4786   8657.86D0     9876.54/                    P0084470
     A  40H  DESC   2PF12.2     1PD12.4     2PG16.4/                    P0084480
     B  40H  TO BE  8647.86  8.6579D+03       9877./                    P0084490
     C   4H  IS, 2PF12.2, 1PD12.4, 2PG16.4//                            P0084500
     H28H  THE LAST TWO LINES OF EACH/24H  SET SHOULD BE THE SAME)      P0084510
      WRITE(NUVI,7153) AC1S(1),AC1S(2),AC1S(3),AC1S(4),                 P0084520
     1  AC1D(4),AC1S(20),AC1S(23),AC1D(5),AC1S(24)                      P0084530
C*****  I/O FORMAT RESCAN                                               P0084540
C*****  INPUT CARDS  36, 37, 38                                         P0084550
7146  FORMAT( I1,I2,I3)                                                 P0084560
      READ(IRVI,7146) I2I,IAC1I                                         P0084570
7147  FORMAT(/ 37H  FORMAT RESCAN - THE SECOND GROUP OF/38H  EACH SET SHP0084580
     1OULD AGREE WITH THE FIRST //15H   1   22   333/15H   4   55   666/P0084590
     115H   7   88   999/1H )                                           P0084600
      WRITE(NUVI,7147)                                                  P0084610
7148  FORMAT(I4,I5,I6)                                                  P0084620
      WRITE(NUVI,7148) I2I(1,1),I2I(2,1),I2I(1,2),I2I(2,2),IAC1I        P0084630
C*****  INPUT CARDS  39, 40                                             P0084640
7149  FORMAT(I4, 2(I1,1X,I2))                                           P0084650
      READ( IRVI,7149) I2I, IAC1I                                       P0084660
7150  FORMAT(/21H   2 **   4 $$   6 ((/7H   8 $$/1H )                   P0084670
      WRITE( NUVI,7150)                                                 P0084680
7151  FORMAT (I4,3H **,1(I4,3H $$,(I4,3H (()))                          P0084690
      WRITE( NUVI,7151) I2I(2,1),I2I(2,2),IAC1I(2),IAC1I(4)             P0084700
C*****     END OF TEST SEGMENT 008                                      P0084710
C*****  WHEN EXECUTING ONLY SEGMENT 008 , THE STOP AND END CARDS        P0084720
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C= IN COLUMNS       P0084730
C*****  1 AND 2 REMOVED                                                 P0084740
C=    STOP                                                              P0084750
C=    END                                                               P0084760
      STOP                                                              P008C1
      END                                                               P008C2
   PREPARED BY USER
   DO NOT READ OR WRITE RECORD  2  .  DOUBLE SPACE ON OUTPUT.   ID 2
   PREPARED BY USER
   DO NOT READ OR WRITE RECORD  4  .  DOUBLE SPACE ON OUTPUT    ID 4
   PREPARED BY USER
       DO NOT READ OR WRITE RECORD 6  DOUBLE SPACE ON OUTPUT    ID 6
  999
  555554444
  666  777777  8
  333333111112222222255555444444444444
  7.7123456.7
  8.889.9997.123456
  5.44446.5555533.133.133.133.1444.1
  5555.15555.1  66666.166666.1  44.22
  2.12.12.12.12.1666.3334.3334.3334.333
-0.1E+01+0.22E-01 0.333E+02 0.4444E+03-0.55555E-03+0.666666E+00+0.9876543E+12
1.05.522.066.633.123455.0789
123.00456.88 0.123E+01  +0.987+1 -0.2345+02 -0.6879E+2+0.7E+03 0.4E+03
 0.9876543E-04+0.1357913E-04
19.34+0.2468E+02   +.765+287.643.96 0.5407E+0243.96+0.5407E+0243.96   0.5407+2
  +0.1D+06
-0.334D-04   -.334-4 +0.7657654D00 0.12345678901D+10
 +0.98765432109876D-1+0.98765432109876D-01    .98765432109876-1
 -.555555542D+03  -0.555555542+3
TABC
FDEFFGHIT*+T1F$)TF
  9.91.19.92.29.93.39.94.49.91.19.92.29.93.39.94.4
9.95.59.96.69.97.79.98.89.95.59.96.69.97.79.98.8
  -9.9-9.9-9.9-9.9
-0.99D+01-0.99D+01-0.99D+01-0.99D+01-0.99D+01 -.99D+01  -.99+01   -.99+1
9999999999
  +0.99D+01 0.99D+01  +.99D01   +.99D1
.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9.9
TFTFTFTFTF
  99999999+0.99D+01 0.99D+01 0.99D+01+0.99D+01    .99D1
9.95.59.96.69.97.79.98.8999999999999999TFFT9.99.99.99.99.9
     T   F         T    F
  4444.55555
123.45678E2  1234.5678  123.45678  12.345678  1.2345678  .12345678
 9876.5498.7654E2 9876.54    987.654864786D-486.4786E286.4786  8657.86D0   9876.54
 9.8765598.7654E2  9876.54   987.654864786D-386.4786E286.4786  8657.86D0   9876.54
122333544888611222
455666233444966111
788999377555899777
11112 334 559 880 11
6 778 995 441 222 00
C***********************************************************************P0090010
C*****                                                                  P0090020
C*****                       AFRMT - (009)                              P0090030
C*****                                                                  P0090040
C***********************************************************************P0090050
C*****  GENERAL PURPOSE                                         ASA REFSP0090060
C*****    TO TEST SIMPLE FORMAT AND FORMATTED I/O STATEMENTS   7.1.3.2.2P0090070
C*****    WHICH USE A-CONVERSION SO THAT THIS FEATURE MAY      7.1.3.2.2P0090080
C*****    BE USED IN OTHER SEGMENTS                            7.1.3.2.3P0090090
C*****                                                         7.2.3    P0090100
C*****                                                         7.2.3.8  P0090110
C*****  RESTRICTIONS OBSERVED                                           P0090120
C*****  *  ALL FORMAT STATEMENTS ARE LABELED                  7.2.3  /57P0090130
C*****  *  H AND X DESCRIPTORS ARE NEVER REPEATED             7.2.3.3/54P0090140
C*****  *  FIELD WIDTH IS NEVER ZERO                          7.2.3  /18P0090150
C*****  *  IF THERE IS AN I/O LIST, THE FORMAT STATEMENT      7.2.3.4/22P0090160
C*****     CONTAINS AT LEAST ONE FIELD DESCRIPTOR (OTHER                P0090170
C*****     THAN H OR X)                                                 P0090180
C*****  *  ITEMS IN I/O LIST CORRESPOND TO FORMAT DESCRIPTORS 7.2.3.4/36P0090190
C*****  *  FIELD WIDTH NEVER EXCEEDED BY OUTPUT               7.2.3.6/01P0090200
C*****                                                                  P0090210
C*****    READ AND WRITE STATEMENTS FOR ENTIRE SEGMENT FOLLOW           P0090220
C*****                                                                  P0090230
C*****    FORMATTED READ AND WRITE STATEMENTS WITH ALL      7.1.3.2.1/25P0090240
C*****    TYPES OF FIELDS. ONLY A (HOLLERITH) CONVERSION    7.2.3.8  /16P0090250
C*****    IS USED IN THE FORMAT STATEMENTS. SOME A FORMAT   7.2.3.3  /01P0090260
C*****    DESCRIPTORS ARE REPEATED                                      P0090270
C INPUT DATA TO THIS SEG. CONSISTS OF 3 DATA CARD IMAGES IN COLS. 1 - 55P0090280
COL.      1-----------------------------31----------------------55      P0090290
CARD  1   B=EF-*JKL/()012TUVW+,.$X YZACDGHIPQRSMN0678(C)BZ$9+A345       P0090300
CARD  2   QZ1*A                                                         P0090310
CARD  3   ABCDEFGHIJKLMNOPQRSTUVWXYZ                                    P0090320
C*****                                                                  P0090330
C*****  S P E C I F I C A T I O N S   SEGMENT 009                       P0090340
C*****                                                                  P0010080
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C*****  WHEN EXECUTING ONLY SEGMENT 009, THE SPECIFICATION STATEMENTS   P0010085
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0010090
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0010095
C*****                                                                  P0010100
C=     DIMENSION A1S(5),A3S(3,3,3),EP1S(33),IAC2I(2,7),AC2S(5,6)        P0010105
C=    1,MCA1I(5),CMA1S(5)                                               P0010110
C=     INTEGER BVI,MAVI,LAVI,MCA3I(2,3,3)                               P0010115
C=     REAL MVS,CVS,BCVS                                                P0010120
C=     LOGICAL MCA1B(7), A1B(2), A2B(2,2),A3B(2,2,2),AVB,EVB            P0010125
       DIMENSION A1S(5),A3S(3,3,3),EP1S(33),IAC2I(2,7),AC2S(5,6)        P009A1
      1,MCA1I(5),CMA1S(5)                                               P009A2
       INTEGER BVI,MAVI,LAVI,MCA3I(2,3,3)                               P009A3
       REAL MVS,CVS,BCVS                                                P009A4
       LOGICAL MCA1B(7), A1B(2), A2B(2,2),A3B(2,2,2),AVB,EVB            P009A5
C*****                                                                  P0010130
C*****  I N P U T - O U T P U T  T A P E  ASSIGNMENT STATEMENTS         P0090350
C*****                                                                  P0070150
C*****  WHEN EXECUTING ONLY SEGMENT 009, THE FOLLOWING TWO STATEMENTS   P0070155
C*****   NUVI = 6    AND IRVI = 5    MUST HAVE                          P0070160
C*****  THE C= IN COL 1 AND 2 REMOVED.                                  P0070165
C=     NUVI = 6                                                         P0070170
C=     IRVI = 5                                                         P0070175
       NUVI = 6                                                         P009B1
       IRVI = 5                                                         P009B2
C*****                                                                  P0070180
       WRITE (NUVI,0090)                                                P0090360
       READ (IRVI,0091) MVS, IAC2I(2,2),MAVI ,AC2S(4,2),MCA1I(1),LAVI,  P0090370
     1  A2B(1,2),A1B(2), BCVS, MCA1B(2), BVI, CVS,  EVB,A1S(2),EP1S(9), P0090380
     2A3S(1,1,1),A3B(2,2,1),MCA3I(1,2,3), MCA3I(2,1,2), MCA3I(1,1,3)    P0090390
       WRITE (NUVI,0092) BVI, MVS, CVS, MAVI, EVB, MCA1I(1), EP1S(9),   P0090400
     1     A1S(2), A1B(2), MCA1B(2), IAC2I(2,2), AC2S(4,2),             P0090410
     2     LAVI, BCVS, A2B(1,2), MCA3I(1,1,3), A3S(1,1,1),              P0090420
     3     MCA3I(2,1,2), MCA3I(1,2,3), A3B(2,2,1)                       P0090430
C*****     FORMATTED READ AND WRITE TO TEST HOLLERITH FIELDS   7.2.3.8/22P0090440
C*****     WHERE FIELD WIDTH IS LESS THAN THE WORD LENGTH      7.2.3.8/28P0090450
C*****     CAPACITY OF THE MACHINE                                      P0090460
       WRITE (NUVI,0093)                                                P0090470
       READ (IRVI,0094) CMA1S(2), CMA1S(1), LCCVI, AVB, BVI             P0090480
       WRITE (NUVI,0095) BVI, AVB, CMA1S(2), LCCVI, CMA1S(1)            P0090490
C*****     FORMATTED READ AND WRITE TO TEST HOLLERITH FIELDS   7.2.3.8/20P0090500
C*****     WHERE FIELD WIDTH IS GREATER THAN THE WORD LENGTH   7.2.3.8/25P0090510
C*****     CAPACITY OF THE MACHINE                                      P0090520
       WRITE (NUVI,0096)                                                P0090530
       READ (IRVI,0097) MRRVI                                           P0090540
       WRITE (NUVI,0098) MRRVI                                          P0090550
C*****                                                                  P0090560
C*****                                                                  P0090570
C*****     FORMAT STATEMENTS FOR THE ENTRIRE SEGMENT FOLLOW             P0090580
C*****     FORMATS TO TEST A CONVERSION. FIELD WIDTH IS        7.2.3.8/16P0090590
C*****     FROM 1 TO 4 CHARACTERS. SOME A DESCRIPTORS ARE      7.2.3.3/01P0090600
C*****     REPEATED.                                                    P0090610
0090   FORMAT (1H1,1X,26HAFRMT - (009) A-CONVERSION//2X,                P0090620
     117HASA REF - 7.2.3.8//40H  EACH PAIR OF LINES SHOULD BE IDENTICAL/P0090630
     28X,26HFOR COMPUTERS STORING FOUR/8X,27HOR MORE CHARACTERS PER WORDP0090640
     3)                                                                 P0090650
0091   FORMAT ( 2(A1), 2(A2), 3(A3), 3(A4), A1, A2, A3, A4, 6(A3))      P0090660
0092   FORMAT (// 29H  ABCDEFGHIJKLMNOPQRSTUVWX YZ/ 2X, 2(A1), 2(A2),   P0090670
     1  3(A3), 3(A4)//12H  =-*/()+,.$/ 2X, A1, A2, A3, A4 //            P0090680
     2  20H  0123456789+AB2$(C)/ 2X, 6 A3 )                             P0090690
C*****     FORMATS TO TEST A CONVERSION WHERE FIELD WIDTH      7.2.3.8/22P0090700
C*****     IS LESS THAN THE WORD LENGTH CAPACITY OF MACHINE    7.2.3.8/28P0090710
0093   FORMAT (//35H  TEST A CONVERSION - ADDING BLANKS/40H  EACH PAIR OFP0090720
     1 LINES SHOULD BE IDENTICAL)                                       P0090730
0094   FORMAT ( 5(A1))                                                  P0090740
0095   FORMAT (//4H   A  / 3X, A3//4H   */ 3X, A3  //4H   Q/ 3X, A3//   P0090750
     1 4H   1/3X, A3 //4H   Z/ 3X,A3)                                   P0090760
C*****     FORMATS TO TEST A CONVERSION WHERE FIELD WIDTH      7.2.3.8/20P0090770
C*****     IS GREATER THAN WORD LENGTH CAPACITY OF MACHINE     7.2.3.8/25P0090780
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0096  FORMAT(/25H  TEST A FIELD TRUNCATION/37H  2ND LINE SHOULD PARTIALLP0090790
     1Y MATCH 1ST)                                                      P0090800
0097  FORMAT ( A26 )                                                    P0090810
0098  FORMAT (// 28H  ABCDEFGHIJKLMNOPQRSTUVWXYZ/ 2X, A26)              P0090820
C*****    END OF TEST SEGMENT 009                                       P0090830
C*****  WHEN EXECUTING ONLY SEGMENT 009 , THE STOP AND END CARDS        P0090840
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C= IN COLUMNS       P0090850
C*****  1 AND 2 REMOVED                                                 P0090860
C=    STOP                                                              P0090870
C=    END                                                               P0090880
      STOP                                                              P009C1
      ENO                                                               P009C2
B=EF-*JKL/()012TUVW+,.$X YZACDGHIPQRSMN0678(C)B2$9+A345
Q21*A
ABCDEFGHIJKLMNOPQRSTUVWXYZ
C***********************************************************************P0100010
C*****                                                                  P0100020
C*****                      DATAZ - (010)                               P0100030
C*****                                                                  P0100040
C***********************************************************************P0100050
C*****                                                                  P0100060
C*****  GENERAL PURPOSE                                                 P0100070
C*****    TO TEST CONTENTS OF VARIABLES THAT WERE FORMEO BY             P0100080
C*****    DATA STATEMENTS IN SEG. OATA1 - (003)                         P0100090
C***********************************************************************P0030010
C*****                                                                  P0030020
C*****                      OATA1 - (003)                               P0030030
C*****                             COMPLETE WITH DATAZ - (010)          P0030040
C*****                                                                  P0030050
C***********************************************************************P0030060
C*****  GENERAL PURPOSE                                        ASA REFSP0030070
C*****    TO TEST FORMAT OF OATA STATEMENT                     7.2.2   P0030080
C*****  RESTRICTIONS OBSERVEO                                           P0030090
C*****    NO DUMMY ARGUMENTS OR EXTERNAL FUNCTION NAMES         7.2.2/27P0030100
C*****    APPEAR IN OATA STATEMENTS                           8.4.1.1/40P0030110
C*****                                                        10.1.2/08P0030120
C*****    NO INITIALY DEFINED ITEMS APPEAR IN BLANK COMMON      7.2.2/39P0030130
C*****                                                        10.2.4/47P0030140
C*****    STORAGE UNITS INITIALIZEO ONLY ONCE                 10.1.2/10P0030150
C*****    SUBSCRIPTS ARE INTEGER CONSTANTS                     7.2.2/28P0030160
C*****  EXPLICIT VARIABLES                                              P0030170
C*****    AVI  IS INTEGER                                               P0030180
C*****    JVS IS REAL                                                   P0030190
C*****                                                                  P0030200
C*****  S P E C I F I C A T I O N S  SEGMENTS 003 ANO 010               P0030210
C*****                                                                  P0030220
C*****  WHEN EXECUTING ONLY SEGMENTS 003 ANO 010, THE SPECIFICATION     P0010140
C*****  STATEMENTS WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C=       P0010145
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P0010150
C*****                                                                  P0010155
C=    DIMENSION IAC2I(2,7), EP1S(33), AC2S(5,6)                         P0010160
C=   1,AC3S(1,1,3)                                                     P0010165
C=    INTEGER AVI ,MCA3I(2,3,3), I1I(5)                                 P0010170
C=    REAL JVS                                                          P0010175
C=    LOGICAL MAVB,MBVB,MCVB,   MCA1B(7),GH2B(1,2),GI3B(1,1,2),GG1B(2)  P0010180
C=    DOUBLE PRECISION AVD,BVO,CVO,OVO                                  P0010185
C=   1,DPA2O(2,2),MCA3D(1,4,2),A1D(4)                                  P0010190
C=    COMPLEX AOSVC,BCVC,CHEVC,OCVC,LL1C(32),LM2C(8,4),LN3C(9,2,2)      P0010195
C*****                                                                  P0010200
      DIMENSION IAC2I(2,7), EP1S(33), AC2S(5,6)                         P003A1
     1,AC3S(1,1,3)                                                      P003A2
      INTEGER AVI ,MCA3I(2,3,3), I1I(5)                                 P003A3
      REAL JVS                                                          P003A4
      LOGICAL MAVB,MBVB,MCVB,   MCA1B(7),GH2B(1,2),GI3B(1,1,2),GG1B(2)  P003A5
      DOUBLE PRECISION AVD,BVO,CVO,DVO                                  P003A6
     1,DPA2D(2,2),MCA3O(1,4,2),A1O(4)                                   P003A7
      COMPLEX AOSVC,BCVC,CHEVC,OCVC,LL1C(32),LM2C(8,4),LN3C(9,2,2)      P003A8
C*****    TEST DATA INITIALIZATION OF INTEGER CONSTANTS TO    5.1.1.1  P0030230
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C*****    INTEGER VARIABLES                                             P0030240
      DATA  I1I(1),MCA3I(1,2,1),MCA3I(2,2,2),IAC2I(2,5),IAC2I(2,6),     P0030250
     AMCA3I(2,1,1)/0,2*10,3*246/                                        P0030260
C*****    TEST DATA INITIALIZATION OF REAL CONSTANTS TO      5.1.1.2    P0030270
C*****    REAL VARIABLES                                                P0030280
      DATA EP1S(8),EP1S(10),EP1S(12),AC2S(5,5),EP1S(11),AC2S(5,3),      P0030290
     AAC2S(5,2)/2*0.,2*-750.05,.24615E3,2.4615E2,3.54674E+3/            P0030300
C*****    TEST DATA INITIALIZATION OF DP CONTANTS TO         5.1.1.3    P0030310
C*****    DP VARIABLES                                                  P0030320
      DATA BVD ,DPA2D(2,1),CVD,DPA2D(1,2),  DVD,DPA2D(2,2)/+34567890.1D-P0030330
     A3,345.678901D+2,112233.5D-08,11.22335D-4,3.4D12,0.34D13/          P0030340
C*****    TEST DATA INITIALIZATION OF COMPLEX CONSTANTS TO   5.1.1.4    P0030350
C*****    COMPLEX VARIABLES                                             P0030360
      DATA ADSVC,LN3C(9,1,2),LL1C(30),LN3C(8,2,2),LM2C(8,3),LN3C(9,1,1),P0030370
     ALL1C(32),LN3C(8,1,2)/2*(11.1,22.22),(-3.45E1,-67.8E-1),           P0030380
     B(-34.5E0,-6.78E0),(10.E0,-20.E0),(1.0E1,-2.0E1),(-20.0E1,+4.E3),  P0030390
     C(-200.E0,+4000.E0)/                                               P0030400
C*****    TEST DATA INITIALIZATION OF LOGICAL CONSTANTS TO   5.1.1.5    P0030410
C*****    LOGICAL VARIABLES                                             P0030420
      DATA MAVB ,MCA1B(6), MBVB/2*.TRUE.,.FALSE./                       P0030430
C*****    TEST DATA INITIALIZATION OF HOLLERITH CONSTANTS    5.1.1.6    P0030440
      DATA GI3B(1,1,2),GG1B(1),EP1S(15)/2HNO,2*2HAD/                    P0030450
C*****    TEST DATA INITIALIZATION OF A MIXTURE OF ALL TYPES OF         P0030460
C*****    CONSTANTS AND VARIABLES IN ONE DATA STATEMENT                 P0030470
      DATA  I1I(2),IAC2I(1,5),IAC2I(1,3), I1I(5),IAC2I(2,4),            P0030480
     AMCA3I(1,1,2), AVI,EP1S(13),AC2S(2,6),AC2S(1,6),AC3S(1,1,1),       P0030490
     BAC2S(3,6),AC3S(1,1,2),AC2S(4,6), AVD,A1D(1),DPA2D(1,1),           P0030500
     CMCA3D(1,1,1),A1D(2),MCA3D(1,1,2),LL1C(29),LN3C(8,2,1),BCVC,       P0030510
     DLM2C(8,4),GH2B(1,1),GI3B(1,1,1), MCVB/3*0,4*-750,2*0.,2*246.15,   P0030520
     E354674.E-2,354.674E+ 1,35467.4E-01,3*-.295D5,-29.5D+3,            P0030530
     F3456.78901D+01,0.345678901D+5,2*(1.11E1,+222.2E-1),(-34.5,-6.78), P0030540
     G(-.345E2,-678.E-2),2*.TRUE.,.FALSE./, I1I(3), I1I(4),             P0030550
     HMCA3I(1,2,2),AC2S(5,6),JVS      ,EP1S(14),AC3S(1,1,3),IAC2I(1,4), P0030560
     ICHEVC,LL1C(31),DCVC,LM2C(8,2),A1D(3),MCA3D(1,3,1),A1D(4),         P0030570
     JMCA3D(1,4,1),         MCA1B(7),GH2B(1,2)             / 2*10,+246,P0030580
     K-.75005E03,-7.5005E+02,2HBC,2H*=,2H P,2*(10.,-20.),               P0030590
     L(-200.,+4000.),(-2000.E-1,+400.E1),+1122.335D-6,0.00001122335D+2, P0030600
     M34.0D11,0.034D14,2*.FALSE./                                       P0030610
C*****    END OF SEGMENT 003                                            P0030620
C*****                                                                  P0100100
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0100110
C*****                                                                  P0100120
C*****  WHEN EXECUTING ONLY SEGMENTS 003 AND 010 THE FOLLOWING STATEMENTP0070190
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1  AND  2 REMOVED.       P0070195
C=    NUVI = 6                                                          P0070200
      NUVI = 6                                                          P010B1
C*****                                                                  P0070205
      WRITE (NUVI,100)                                                  P0100130
100   FORMAT (1H1,1X,           32HDATA2 - (010) DATA STATEMENT USE/    P0100140
     A   /2X,17HASA REFS. - 7.2.2//2X,7HRESULTS)                        P0100150
      WRITE (NUVI,101)                                                  P0100160
101   FORMAT(/35H  LINE 1 OF EACH GROUP IS HOLLERITH/36H  INFORMATION. TP0100170
     AEST IS SUCCESSFUL IF/37H  EACH GROUP CONTAINS THE SAME VALUES)    P0100180
      WRITE (NUVI,102) I1I(1),     I1I(2), IAC2I(1,5), IAC2I(1,3),      P0100190
     A                 MCA3I(1,2,1), MCA3I(2,2,2),  I1I(3),  I1I(4),    P0100200
     B                 IAC2I(2,5), IAC2I(2,6), MCA3I(2,1,1),            P0100210
     C                 MCA3I(1,2,2), I1I(5), IAC2I(2,4), MCA3I(1,1,2),  P0100220
     D                 AVI                                              P0100230
102   FORMAT   ( /25X,1H0/4(I26/)//                                     P0100240
     A            24X,2H10/4(I26/)//                                    P0100250
     B            23X,3H246/4(I26/)//                                   P0100260
     C            22X,4H-750/4(I26/))                                   P0100270
      WRITE (NUVI,103) EP1S(8), EP1S(10), EP1S(13), AC2S(2,6),          P0100280
     A                 AC2S(1,6),AC3S(1,1,1),EP1S(11),AC2S(5,3),        P0100290
     B                 AC2S(3,6), AC2S(5,2), AC3S(1,1,2), AC2S(4,6),    P0100300
     C                 EP1S(12), AC2S(5,5), AC2S(5,6), JVS              P0100310
103   FORMAT   ( /22X,4H0.00/4(F26.2/)//                                P0100320
     A            20X,6H246.15/4(F26.2/)//                              P0100330
     B            19X,7H3546.74/4(F26.2/),                              P0100340
     C        1H1,18X,7H-750.05/4(F26.2/))                              P0100350
      WRITE (NUVI,104)ADSVC, LL1C(29), LN3C(9,1,2), LN3C(8,2,1),        P0100360
     A                 BCVC, LL1C(30), LM2C(8,4), LN3C(8,2,2),          P0100370
     B                 CHEVC, LL1C(31), LM2C(8,3), LN3C(9,1,1),         P0100380
     C                 DCVC, LL1C(32), LM2C(8,2), LN3C(8,1,2)           P0100390
104   FORMAT   ( /9X,17H 11.1       22.22/4(F14.1,F12.2/)//             P0100400
     A            8X,18H-34.50       -6.78/4(F14.2,F12.2/)//            P0100410
     B            8X,18H 10.00      -20.00/4(F14.2,F12.2/)//            P0100420
     C            5X,21H  -200.00     4000.00/4(F14.2,F12.2/))          P0100430
      WRITE (NUVI,105)  AVD, A1D(1), DPA2D(1,1), MCA3D(1,1,1),          P0100440
     A                 BVD, A1D(2), DPA2D(2,1), MCA3D(1,1,2),           P0100450
     B                 CVD, A1D(3),DPA2D(1,2), MCA3D(1,3,1),            P0100460
     C                 DVD, A1D(4), DPA2D(2,2), MCA3D(1,4,1)            P0100470
105   FORMAT   ( /16X,10H-0.295D+05/4(D26.3/)//                         P0100480
     A            11X,15H0.345678901D+05/4(D26.9/)//                    P0100490
     B            13X,13H0.1122335D-02/4(D26.7/),                       P0100500
     C        1H1,17X,8H0.34D+13/4(D26.2/))                             P0100510
      WRITE (NUVI,106) MAVB, MCA1B(6), GH2 B(1,1), GI3B(1,1,1),         P0100520
     A                 MBVB, MCVB, MCA1B(7), GH2B(1,2), GG1B(1),        P0100530
     B                 EP1S(15), GI3B(1,1,2),                           P0100540
     C                 EP1S(14), AC3S(1,1,3), IAC2I(1,4)                P0100550
106   FORMAT   (//20X,4H   T/  4(L24/)//                                P0100560
     A            20X,4H   F/  4(L24/)//                                P0100570
     B            22X,2HAD /2(22X,A2/)/                                 P0100580
     C            22X,2HND /  22X,A2//                                  P0100590
     D            22X,2HBC /  22X,A2//                                  P0100600
     E            22X,2H*= /  22X,A2//                                  P0100610
     F            22X,2H P /  22X,A2)                                   P0100620
C*****    END OF SEGMENT 010                                            P0100630
C*****  WHEN EXECUTING ONLY SEGMENTS 003 AND 010, THE  STOP  AND  END   P0100640
C*****  CARDS WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                P0100650
C*****  IN COLUMNS  1  AND  2  REMOVED                                  P0100660
C=    STOP                                                              P0100670
C=    END                                                               P0100680
      STOP                                                              P010C1
      END                                                               P010C2
C***********************************************************************P0110010
C*****                                                                  P0110020
C*****                       AASGN - (011)                              P0110030
C*****                                                                  P0110040
C***********************************************************************P0110050
C*****  GENERAL PURPOSE                                         ASA REF P0110060
C*****  * TO TEST VERY SIMPLE ARITHMETIC ASSIGNMENT             7.1.1.1 P0110070
C*****    STATEMENTS, SO THAT THIS STATEMENT MAY BE                     P0110080
C*****    USED IN LATER SEGMENTS                                        P0110090
C*****  * TO TEST THAT ALL TYPES OF INTEGER AND REAL CONSTANTS     5.1.1P0110100
C*****    MAY BE FORMED                                          5.1.1.1P0110110
C*****                                                           5.1.1.2P0110120
C*****  GENERAL COMMENTS                                                P0110130
C*****  * ONLY REAL AND INTEGER TYPES ARE INCLUDED IN                   P0110140
C*****    THIS SEGMENT - NO MIXING OF TYPES                             P0110150
C*****  * IN ORDER NOT TO EXCEED THE WORD LENGTH CAPACITY OF            P0110160
C*****    SOME COMPUTERS, INTEGER CONSTANTS ARE LIMITED TO              P0110170
C*****    5 DIGITS AND REAL CONSTANTS TO 7 DIGITS.                      P0110180
C*****                                                                  P0110190
C*****  S P E C I F I C A T I O N S  SEGMENT 011                        P0110200
C*****                                                                  P0010210
C*****  WHEN EXECUTING ONLY SEGMENT 011, THE SPECIFICATION STATEMENT    P0010215
C*****  WHICH APPEARS AS A COMMENT MUST HAVE THE C= REMOVED             P0010220
C=    DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),A2S(2,2)         P0010225
      DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),A2S(2,2)         P011A1
C*****                                                                  P0010230
C*****  O U T P U T  T A P E  ASSIGNMENT - NO INPUT DATA                P0110210
C*****                                                                  P0070210
C*****  WHEN EXECUTING ONLY SEGMENT 011, THE FOLLOWING STATEMENT        P0070215
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS  1 AND 2  REMOVED.        P0070220
C*****                                                                  P0070225
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C=    NUVI = 6                                                          P0070230
      NUVI = 6                                                          P011B1
C*****                                                                  P0070235
      WRITE (NUVI,110)                                                  P0110220
110   FORMAT (1H1,1X, 37HAASGN - (011) SIMPLE REAL AND INTEGER/10X,32HARP0110230
     1ITHMETIC ASSIGNMENT STATEMENTS/2X,16HASA REF. - 7.1.1//34H  LINE 1P0110240
     2 OF EACH PAIR IS HOLLERITH/13H  INFORMATION//17H  INTEGER RESULTS)P0110250
C*****    HEADER FOR SEGMENT 011 WRITTEN                                P0110260
C*****    TEST ASSIGNMENT OF UNSIGNED INTEGER CONSTANTS       7.1.1.1/40P0110270
C*****    TO VARIABLES                                        5.1.1.1/15P0110280
      MRRVI = 1                                                         P0110290
      JACVI = 12345                                                     P0110300
      KBCVI = 000                                                       P0110310
C*****    TEST ASSIGNMENT OF SIGNED INTEGER CONSTANTS TO      7.1.1.1/40P0110320
C*****    VARIABLES                                             5.1.1/11P0110330
      MCAVI = +2                                                        P0110340
      LCCVI = -3                                                        P0110350
      MDCVI = - 8765                                                    P0110360
      NECVI = + 6912                                                    P0110370
C*****    TEST ASSIGNMENT OF UNSIGNED INTEGER CONSTANTS       7.1.1.1/40P0110380
C*****    TO ARRAYS                                           5.1.1.1/15P0110390
      IAC1I(1)   = 0                                                    P0110400
      IAC2I(2,1) = 02468                                                P0110410
      IAC2I(2,2) = 00                                                   P0110420
      IAC1I(3)   = 4444                                                 P0110430
C*****    TEST ASSIGNMENT OF SIGNED INTEGER CONSTANTS         7.1.1.1/40P0110440
C*****    TO ARRAYS                                             5.1.1/11P0110450
      IAC2I(1,1) = +45                                                  P0110460
      IAC1I(4)   = + 4321                                               P0110470
      IAC1I(2)   = -23                                                  P0110480
      IAC2I(1,2) = - 3123                                               P0110490
C*****    TEST ASSIGNMENT OF UNSIGNED REAL CONSTANTS          7.1.1.1/40P0110500
C*****    TO VARIABLES (BASIC REAL CONSTANTS)                 5.1.1.2/18P0110510
      ACVS  = 1.0                                                       P0110520
      BCVS  = 358.6724                                                  P0110530
C*****    TEST ASSIGNMENT OF SIGNED REAL CONSTANTS            7.1.1.1/40P0110540
C*****    TO VARIABLES (BASIC REAL CONSTANTS)                 5.1.1.2/18P0110550
C*****                                                          5.1.1/11P0110560
      CCVS  = -2.0                                                      P0110570
      DCVS  = +3.0                                                      P0110580
      ECVS = -2714.250                                                  P0110590
      FCVS = +29.30542                                                  P0110600
C*****    TEST ASSIGNMENT OF UNSIGNED REAL CONSTANTS          7.1.1.1/40P0110610
C*****    TO ARRAYS (BASIC REAL CONSTANTS)                    5.1.1.2/18P0110620
C*****                                                          5.1.1/11P0110630
      AC1S(2)   = 86.27                                                 P0110640
      AC2S(1,2) = 1034.2                                                P0110650
      AC1S(1)   = 0.0                                                   P0110660
      AC2S(1,1) = 0.00000                                               P0110670
C*****    TEST ASSIGNMENT OF SIGNED REAL CONSTANTS            7.1.1.1/40P0110680
C*****    TO ARRAYS (BASIC REAL CONSTANTS)                    5.1.1.2/18P0110690
C*****                                                          5.1.1/11P0110700
      AC2S(2,2) = +345.678                                              P0110710
      AC1S(3)   = -2.5                                                  P0110720
      AC2S(2,1) = -5.66                                                 P0110730
      AC1S(4)   = +1.111111                                             P0110740
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL         5.1.1.2/22P0110750
C*****    CONSTANTS WITH NO DECIMAL DIGITS TO BOTH                      P0110760
C*****    VARIABLES AND ARRAYS                                          P0110770
      GCVS  =  1.                                                       P0110780
      HCVS  = -2.                                                       P0110790
      AADVS = +3.                                                       P0110800
      AC2S(3,1) =  4.                                                   P0110810
      AC2S(1,3) = +5.                                                   P0110820
      AC1S(5)   = -6.                                                   P0110830
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL         5.1.1.2/22P0110840
C*****    CONSTANTS WITH NO INTEGER PART TO BOTH                        P0110850
C*****    VARIABLES AND ARRAYS                                          P0110860
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      BBDVS = .0                                                        P0110870
      CCDVS = +.23                                                      P0110880
      DDDVS = -.716                                                     P0110890
      AC1S(6)   = -.7                                                   P0110900
      AC2S(4,1) = .81                                                   P0110910
      AC1S(7)   = +.9                                                   P0110920
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL         5.1.1.2/25P0110930
C*****    CONSTANTS WITH UNSIGNED AND SIGNED DECIMAL          5.1.1.2/32P0110940
C*****    EXPONENTS TO BOTH VARIABLES AND ARRAYS                        P0110950
      EEDVS =  1.05E02                                                  P0110960
      FFDVS = -7.6E1                                                    P0110970
      GGDVS = +332.4E0                                                  P0110980
      HHDVS = 51.32E-1                                                  P0110990
      OODVS = +5.34E-3                                                  P0111000
      PPDVS = -14.19E-2                                                 P0111010
      QQDVS = -9.9E+2                                                   P0111020
      RRDVS = +10.5210E+3                                               P0111030
      SSDVS = 4.56E+1                                                   P0111040
      AC2S(1,4) = 665.2E0                                               P0111050
      AC1S(11) =-52.9E01                                                P0111060
      AC1S(9) = +78.564E2                                               P0111070
      AC2S(5,1) = -3.4567E+3                                            P0111080
      AC2S(1,5) = 61.62E+2                                              P0111090
      AC1S(10) = +0.023E+1                                              P0111100
      AC1S(8) =  94.333E-1                                              P0111110
      AC1S(12) = +0.3524E-2                                             P0111120
      AC2S(3,2) = -743.2E-3                                             P0111130
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL         5.1.1.2/22P0111140
C*****    CONSTANTS (NO DECIMAL PART) WITH DECIMAL            5.1.1.2/26P0111150
C*****    EXPONENTS TO BOTH VARIABLES AND ARRAYS                        P0111160
      TTDVS = 1.E0                                                      P0111170
      UUDVS = +123.E2                                                   P0111180
      VVDVS = -11.E3                                                    P0111190
      WWDVS = 144.E-1                                                   P0111200
      XXDVS = -12.E-2                                                   P0111210
      YYDVS = +3645.E-3                                                 P0111220
      ZZDVS = 1.E+4                                                     P0111230
      CMAVS = -200.E+1                                                  P0111240
      CMBVS = +99.E+2                                                   P0111250
      AC1S(13) = +0.E00                                                 P0111260
      AC2S(2,5) = -1512.E2                                              P0111270
      AC2S(4,3) = 214.E3                                                P0111280
      AC1S(15) = 34.E-1                                                 P0111290
      AC1S(14) = -4.E-2                                                 P0111300
      AC2S(3,4) = +53214.E-4                                            P0111310
      AC2S(4,4) = +6.E+3                                                P0111320
      AC2S(2,3) = 72.E+4                                                P0111330
      AC1S(16) = -813.E+1                                               P0111340
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL         5.1.1.2/22P0111350
C*****    CONSTANTS (NO INTEGER PART) WITH DECIMAL            5.1.1.2/26P0111360
C*****    EXPONENTS TO BOTH VARIABLES AND ARRAYS                        P0111370
      CMCVS = .234E0                                                    P0111380
      CMDVS = -.3E2                                                     P0111390
      CMEVS = +.44E1                                                    P0111400
      CMFVS = .36E-3                                                    P0111410
      CMGVS = +.9E-4                                                    P0111420
      CMHVS = -.10E-2                                                   P0111430
      CMOVS = .777E+1                                                   P0111440
      CMPVS = -.29E+3                                                   P0111450
      CMQVS = +.04E+2                                                   P0111460
      AC1S(17) = .90E1                                                  P0111470
      AC2S(4,2) = +.810E0                                               P0111480
      AC1S(19) = -.7E3                                                  P0111490
      AC2S(3,3) = .62E+3                                                P0111500
      AC1S(21) = +.5310E+1                                              P0111510
      A2S(1,2) = -.442E+2                                               P0111520
      AC1S(18) = .3E-4                                                  P0111530
      AC2S(2,4) = +.25E-03                                              P0111540
      A2S(2,1) = -.163E-2                                               P0111550
C*****    TEST ASSIGNMENT OF UNSIGNED AND SIGNED REAL        5.1.1.2/34P0111560
C*****    CONSTANTS (FORMED BY PLACING DECIMAL EXPONENT                 P0111570
C*****    AFTER INTEGER CONSTANT) TO BOTH VARIABLES AND                 P0111580
C*****    ARRAYS                                                        P0111590
      AVS = 709E3                                                       P0111600
      BVS = +81842E0                                                    P0111610
      CVS = -9E5                                                        P0111620
      DVS = 627E+2                                                      P0111630
      EVS = +53E+3                                                      P0111640
      FVS = -4E+04                                                      P0111650
      GVS = 1463E-2                                                     P0111660
      HVS = +2E-3                                                       P0111670
      PVS = -355E-1                                                     P0111680
      AC1S(24) = 29E5                                                   P0111690
      AC1S(20) = +4072E3                                                P0111700
      AC2S(5,4) = -61835E2                                              P0111710
      AC2S(3,5) = 829E+1                                                P0111720
      AC1S(22) = +03E+2                                                 P0111730
      AC1S(25) = -1E+3                                                  P0111740
      AC2S(4,5) = 3404E-4                                               P0111750
      A2S(2,2) = +55E-5                                                 P0111760
      AC1S(23) = -761E-1                                                P0111770
C*****    VERIFY CORRECTNESS OF ASSIGNMENT BY WRITING                   P0111780
C*****    THE INFORMATION                                               P0111790
      WRITE (NUVI,111) MRRVI, JACVI, KBCVI, MCAVI, LCCVI, MDCVI, NECVI, P0111800
     1      (IAC1I(IVI),IVI=1,4),((IAC2I(IVI,JVI),IVI=1,2),JVI=1,2)     P0111810
      WRITE (NUVI,112)                                                  P0111820
      WRITE (NUVI,113) ACVS, BCVS, CCVS, DCVS, ECVS, FCVS, AC1S(2),     P0111830
     1                 AC2S(1,2), AC1S(1), AC2S(1,1), AC2S(2,2),        P0111840
     2                 AC1S(3), AC2S(2,1), AC1S(4), GCVS, HCVS,         P0111850
     3                 AADVS, AC2S(3,1)                                 P0111860
      WRITE (NUVI,114) AC2S(1,3), AC1S(5), BBDVS, CCDVS, DDDVS, AC1S(6),P0111870
     1                 AC2S(4,1), AC1S(7), EEDVS, FFDVS, GGDVS, HHDVS,  P0111880
     2                 OODVS, PPDVS, QQDVS, RRDVS, SSDVS                P0111890
      WRITE (NUVI,115) AC2S(1,4), AC1S(11), AC1S(9), AC2S(5,1),         P0111900
     1                 AC2S(1,5), AC1S(10), AC1S(8), AC1S(12),          P0111910
     2                 AC2S(3,2), TTDVS, UUDVS, VVDVS, WWDVS, XXDVS,    P0111920
     3                 YYDVS                                            P0111930
      WRITE (NUVI,116) CMAVS, CMBVS, AC1S(13), AC2S(2,5), AC2S(4,3),    P0111940
     1                 AC1S(15), AC1S(14), AC2S(3,4), AC2S(4,4),        P0111950
     2                 AC2S(2,3), AC1S(16), CMCVS, CMDVS, CMEVS,ZZDVS   P0111960
      WRITE (NUVI,117) CMFVS, CMGVS, CMHVS, CMOVS, CMPVS, CMQVS,        P0111970
     1                 AC1S(17), AC2S(4,2), AC1S(19), AC2S(3,3),        P0111980
     1                 AC1S(21),A2S(1,2),AC1S(18), AC2S(2,4),A2S(2,1)   P0111990
      WRITE (NUVI,118) AVS, BVS, CVS, DVS, EVS, FVS, GVS, HVS, PVS,     P0112000
     1                 AC1S(24), AC1S(20), AC2S(5,4), AC2S(3,5),        P0112010
     2                 AC1S(22),AC1S(25),AC2S(4,5),A2S(2,2)   ,         P0112020
     3                 AC1S(23)                                         P0112030
111   FORMAT(/7X,1H1,7X,5H12345,13X,1H0/1X,I7,5X,I7,7X,I7//             P0112040
     1 7X, 1H2, 10X, 2H-3,8X, 6H -8765/1X, I7, 5X, I7,  7X, I7//        P0112050
     2 3X, 5H 6912, 11X, 1H0, 11X, 3H-23/ 1X, I7, 5X, I7, 7X,I7//       P0112060
     3 4X, 4H4444, 7X, 5H 4321, 12X, 2H45/ 1X, I7, 5X, I7, 7X, I7//     P0112070
     4 4X, 4H2468, 6X, 6H -3123, 13X, 1H0/ 1X, I7, 5X, I7, 7X, I7)      P0112080
112   FORMAT (/14H  REAL RESULTS)                                       P0112090
113   FORMAT(/3X,3H1.0, 10X, 8H358.6724, 6X, 4H-2.0/1X,F5.1,6X,F12.4,2X,P0112100
     1 F8.1//3X,3H3.0,8X,9H-2714.250,7X,8H29.30542/1X,F5.1,6X,F11.3,3X, P0112110
     2 F12.5//2X,5H86.27,8X,6H1034.2,10X,3H0.0/1X,F6.2,5X,F9.1,5X,F8.1//P0112120
     3 3X, 3H0.0, 10X,7H345.678,7X, 4H-2.5/1X,F5.1,6X,F11.3,3X,F8.1//   P0112130
     4 2X,5H-5.66,11X,8H1.111111,5X,3H1.0/1X,F6.2,5X,F14.6,F8.1//       P0112140
     5 2X,4H-2.0,12X,3H3.0,10X,3H4.0/1X,F5.1,6X,F9.1,5X,F8.1)           P0112150
114   FORMAT(/3X,3H5.0,11X,4H-6.0,10X,3H0.0/1X,F5.1,6X,F9.1,5X,F8.1//   P0112160
     1 3X,4H0.23,10X,6H-0.716,7X,4H-0.7/1X,F6.2,5X,F11.3,3X,F8.1//      P0112170
     2 3X,4H0.81,11X,3H0.9/1X,F6.2,5X,F9.1/1H1,2X,9H0.105E+03,3X,       P0112180
     3 9H-0.76E+02,5X,10H0.3324E+03/E12.3,E12.2,E15.4//                 P0112190
     4 3X,10H0.5132E+01,3X,9H0.534E-02,3X,11H-0.1419E+00/E13.4,E12.3,   P0112200
     5 E14.4//2X,9H-0.99E+03,5X,12H0.105210E+05,10H 0.456E+02/E11.2,    P0112210
     6 E17.6,E10.3)                                                     P0112220
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115   FORMAT(/3X,10H0.6652E+03,2X,10H-0.529E+03,4X,11H0.78564E+04/E13.4,P0112230
     1 E12.3,E15.5//2X,12H-0.34567E+04,2X,10H0.6162E+04,3X,8H0.23E+00/   P0112240
     2 E14.5,E12.4,E11.2//3X,11H0.94333E+01,2X,10H0.3524E-02,2X,        P0112250
     3 11H-0.7432E+00/E14.5,E12.4,E13.4//3X,7H0.1E+01,6X,9H0.123E+05,   P0112260
     4 3X,9H-0.11E+05/E10.1,E15.3,E12.2//3X,9H0.144E+02,3X,9H-0.12E+00, P0112270
     5 5X,10H0.3645E+01/E12.3,E12.2,E15.4)                              P0112280
116   FORMAT(/12H  -0.200E+04,4X,8H0.99E+04,5X,7H0.0E+00/E12.3,E12.2,  P0112290
     1 E12.1//2X,11H-0.1512E+06,3X,9H0.214E+06,4X,8H0.34E+01/E13.4,     P0112300
     2 E12.3,E12.2//2X,8H-0.4E-01,6X,11H0.53214E+01,2X,7H0.6E+04/E10.1, P0112310
     3 E17.5,E9.1//3X,8H0.72E+06,4X,10H-0.813E+04,4X,9H0.234E+00/E11.2, P0112320
     4 E14.3,E13.3//2X,8H-0.3E+02,6X,8H0.44E+01,5X,7H0.1E+05/E10.1,     P0112330
     5 E14.2,E12.1)                                                     P0112340
117   FDRMAT(/3X,8H0.36E-03,5X,7H0.9E-04,5X,9H-0.10E-02/E11.2,E12.1,    P0112350
     1 E14.2//3X,9H0.777E+01,3X,9H-0.29E+03,5X,7H0.4E+01/E12.3,E12.2,   P0112360
     2 E12.1//3X,8H0.90E+01,5X,9H0.810E+00,3X,8H-0.7E+03/E11.2,E14.3,   P0112370
     3 E11.1//3X,8H0.62E+03,5X,10H0.5310E+01,2X,10H-0.442E+02/E11.2,    P0112380
     4 E15.4,E12.3//3X,7H0.3E-04,6X,8H0.25E-03,4X,10H-0.163E-02/E10.1,  P0112390
     5 E14.2,E14.3/1H1)                                                 P0112400
118   FORMAT(3X,9H0.709E+06,4X,11H0.81842E+05,1X,8H-0.9E+06/E12.3,E15.5,P0112410
     1 E9.1//3X,9H0.627E+05,4X,8H0.53E+05,4X,8H-0.4E+05/E12.3,E12.2,    P0112420
     2 E12.1//3X,10H0.1463E+02,3X,7H0.2E-02,5X,10H-0.355E+02/E13.4,     P0112430
     3 E10.1,E15.3//3X,8H0.29E+07,5X,10H0.4072E+07,2X,12H-0.61835E+07/  P0112440
     4 E11.2,E15.4,E14.5//3X,9H0.829E+04,4X,7H0.3E+03,5X,8H-0.1E+04/    P0112450
     5 E12.3,E11.1,E13.1//3X,10H0.3404E+00,3X,8H0.55E-03,4X,10H-0.761E+0P0112460
     62/E13.4,E11.2,E14.3)                                              P0112470
C*****    END OF TEST SEGMENT 011                                       P0112480
C*****  WHEN EXECUTING ONLY SEGMENT 011, THE STOP  AND  END CARDS       P0112490
C****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                  P0112500
C*****  IN COLUMNS  1  AND  2  REMOVED                                  P0112510
C=    STOP                                                              P0112520
C=    END                                                               P0112530
      STOP                                                              P011C1
      END                                                               P011C2
C***********************************************************************P0130010
C*****                                                                  P0130020
C*****                       DASGN - (013)                              P0130030
C*****                                                                  P0130040
C***********************************************************************P0130050
C*****  GENERAL PURPOSE                                         ASA REF P0130060
C*****  * TO TEST ALL POSSIBLE METHODS OF FORMING DOUBLE      5.1.1 THRUP0130070
C*****    PRECISION CONSTANTS                                           P0130080
C*****  * TO TEST THAT D.P. VARIABLES AND ARRAY               5.1.2 /5  P0130090
C*****    ELEMENTS MAY BE REFERENCED                          5.1.3.1/16P0130100
C*****  * TO TEST VERY SIMPLE ARITHMETIC ASSIGNMENT           7.1.1.1   P0130110
C*****    STATEMENTS, SO THAT THIS FEATURE CAN BE USED        TABLE 1   P0130120
C*****    FOR INITIALIZATION IN LATER SEGMENTS                          P0130130
C*****  S P E C I F I C A T I O N S  SEGMENT 013                        P0130140
C*****                                                                  P0010240
C*****  WHEN EXECUTING ONLY SEGMENT 013, THE SPECIFICATION STATEMENTS   P0010245
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0010250
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0010255
C*****                                                                  P0010260
C=    DDUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD,MCGVD,      P0010265
C=   1MCHVD,MCIVD,EEDVD,ACVD,BCVD,CCVD,DCVD,DDDVD,CCDVD,FFDVD,GGDVD,    P0010270
C=   2 HHDVD,EP1D(43),AC1D(10),BC2D(7,4),CC3D(7,2,2),FC2D(5,5)          P0010275
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD,DPHVD, P0010280
C=   1  DPIVD,DPJVD,DPKVD,DPLVD,DPMVD,DPNVD,DPOVD,DPPVD,                P0010285
C=   2  AADVD,BBDVD,PPDVD,RRDVD,SSDVD,TTDVD,UUDVD,VVDVD,WWDVD,XXDVD,    P0010290
C=   3  YYDVD,ZZDVD,ECVD,FCVD,GCVD,HCVD,RC3D(3,3,3),MCJVD,MCKVD        P0010295
C*****                                                                  P0010300
      DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD,MCGVD,      P013A1
     1MCHVD,MCIVD,EEDVD,ACVD,BCVD,CCVD,DCVD,DDDVD,CCDVD,FFDVD,GGDVD,    P013A2
     2 HHDVD,EP1D(43),AC1D(10),BC2D(7,4),CC3D(7,2,2),FC2D(5,5)          P013A3
      DDUBLE PRECISIDN DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD,DPHVD, P013A4
     1  DPIVD,DPJVD,DPKVD,DPLVD,DPMVD,DPNVD,DPDVD,DPPVD,                P013A5
     2  AADVD,BBDVD,PPDVD,RRDVD,SSDVD,TTDVD,UUDVD,VVDVD,WWDVD,XXDVD,    P013A6
     3  YYDVD,ZZDVD,ECVD,FCVD,GCVD,HCVD,RC3D(3,3,3),MCJVD,MCKVD        P013A7
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0130150
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C*****                                                                  P0130160
C*****  WHEN EXECUTING ONLY SEGMENT 013, THE FOLLOWING STATEMENT        P0070240
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0070245
C*****                                                                  P0070250
C=    NUVI = 6                                                          P0070255
      NUVI = 6                                                          P013B1
      WRITE (NUVI,130)                                                  P0130170
      WRITE(NUVI,131)                                                   P0130180
130   FORMAT(1H1,1X,36HDASGN - (013) SIMPLE D.P. ARITHMETIC/            P0130190
     1 16X,18HASSIGNMENT STMNTS./2X,28HASA REFS. - 7.1.1.1  5.1.1.3//   P0130200
     2  2X,7HRESULTS)                                                   P0130210
131   FORMAT(/2X,23HLINE 1 OF EACH GROUP IS/                            P0130220
     A 2X,21HHOLLERITH INFORMATION)                                     P0130230
C*****    HEADER FOR THIS SEGMENT WRITTEN                               P0130240
C*****    TEST ASSIGNMENT OF UNSIGNED DP CONSTANTS WITH           7.1.1.1/41P0130250
C*****    UNSIGNED EXPONENTS TO VARIABLES AND ARRAY ELEMENTS      5.1.1.3/40P0130260
C*****                                                            5.1.1  /14P0130270
C*****                                                            5.1.1.3/36P0130280
C*****                                                            5.1.1.2/26P0130290
      MCAVD = 3.4D1                                                     P0130300
      MCBVD = 123456.7891011D02                                         P0130310
      AC1D(1)     = 3.4D1                                               P0130320
      AC1D(2)     = 123456.7891011D02                                   P0130330
      BC2D(1,1)   = 3.4D1                                               P0130340
      BC2D(2,1)   = 123456.7891011D02                                   P0130350
      CC3D(1,1,1) = 3.4D1                                               P0130360
      CC3D(2,1,1) = 123456.7891011D2                                    P0130370
C*****    ASSIGNMENT OF UNSIGNED DP CONSTANTS WITH                5.1.1.3/36P0130380
C*****    SIGNED EXPONENTS TO VARIABLES AND ARRAY ELEMENTS        5.1.1.2/26P0130390
      MCCVD =  29.8765234D-3                                            P0130400
      MCDVD =  345.10000555D+4                                          P0130410
      AC1D(3)     = 29.8765234D-3                                       P0130420
      AC1D(4)     = 345.10000555D+4                                     P0130430
      BC2D(3,1)   = 29.8765234D-3                                       P0130440
      BC2D(4,1)   = 345.10000555D+4                                     P0130450
      CC3D(3,1,1) = 29.8765234D-3                                       P0130460
      CC3D(4,1,1) = 345.10000555D+4                                     P0130470
C*****    ASSIGNMENT OF UNSIGNED DP CONSTANTS (NO DECIMAL         5.1.1.2/22P0130480
C*****    PART) WITH UNSIGNED EXPONENTS TO VARIABLES                    P0130490
C*****    AND ARRAY ELEMENTS                                            P0130500
      MCEVD = 22232425.D00                                              P0130510
      AC1D(5)     = 22232425.D00                                        P0130520
      BC2D(5,1)   = 22232425.D00                                        P0130530
      CC3D(5,1,1) = 22232425.D00                                        P0130540
C*****    ASSIGNMENT OF UNSIGNED DP CONSTANTS (NO                 5.1.1.2/22P0130550
C*****    INTEGER PART) WITH UNSIGNED EXPONENTS TO                      P0130560
C*****    VARIABLES AND ARRAY ELEMENTS                                  P0130570
      MCFVD = .281420D5                                                 P0130580
      AC1D(6)     = .281420D5                                           P0130590
      BC2D(6,1)   = .281420D5                                           P0130600
      CC3D(6,1,1) = .281420D5                                           P0130610
C*****    ASSIGNMENT OF UNSIGNED DP CONSTANTS (NO DECIMAL               P0130620
C*****    PART) WITH SIGNED EXPONENTS TO VARIABLES AND                  P0130630
C*****    ARRAY ELEMENTS                                                P0130640
      MCGVD =  4455667788.D+6                                           P0130650
      MCHVD =  35692483569248.D-02                                      P0130660
      AC1D(7)     = 4455667788.D+6                                      P0130670
      AC1D(8)     = 35692483569248.D-02                                 P0130680
      BC2D(7,1)   = 4455667788.D+6                                      P0130690
      BC2D(1,2)   = 35692483569248.D-02                                 P0130700
      CC3D(7,1,1) = 4455667788.D+6                                      P0130710
      CC3D(1,2,1) = 35692483569248.D-2                                  P0130720
C*****    ASSIGNMENT OF UNSIGNED DP CONSTANTS (NO                       P0130730
C*****    INTEGER PART) WITH SIGNED EXPONENTS TO                        P0130740
C*****    VARIABLES AND ARRAY ELEMENTS                                  P0130750
      ACVD =    .6549876D-3                                             P0130760
      BCVD =    .78D+10                                                 P0130770
      AC1D(9)     = .6549876D-3                                         P0130780
      AC1D(10)    = .78D+10                                             P0130790
      BC2D(2,2)   = .6549876D-3                                         P0130800
      BC2D(3,2)   = .78D+10                                             P0130810
      CC3D(2,2,1) = .6549876D-3                                         P0130820
      CC3D(3,2,1) = .78D+10                                             P0130830
C*****    ASSIGNMENT DF SIGNED DP CDNSTANTS WITH               5.1.1  /12P0130840
C*****    UNSIGNED EXPDNENTS TD VARIABLES AND ARRAY                     P0130850
C*****    ELEMENTS                                                      P0130860
      CCVD =   +0.0D0                                                   P0130870
      DCVD =   -17263544.5D3                                            P0130880
      EP1D(1)     = +0.0D0                                              P0130890
      EP1D(2)     = -17263544.5D3                                       P0130900
      BC2D(4,2)   = +0.0D00                                             P0130910
      BC2D(5,2)   = -17263544.5D3                                       P0130920
      CC3D(4,2,1) = +0.0D0                                              P0130930
      CC3D(5,2,1) = -17263544.5D3                                       P0130940
C*****    ASSIGNMENT DF SIGNED DP CDNSTANTS WITH                        P0130950
C*****    SIGNED EXPDNENTS TD VARIABLES AND ARRAY                       P0130960
C*****    ELEMENTS                                                      P0130970
      ECVD =   +1987.62D+1                                              P0130980
      FCVD =   -2.54396621D+2                                           P0130990
      GCVD =   +34.786529910234D-7                                      P0131000
      HCVD =   -44.4D-10                                                P0131010
      EP1D(3)     = +1987.62D+1                                         P0131020
      EP1D(4)     = -2.54396621D+2                                      P0131030
      EP1D(5)     = +34.786529910234D-7                                 P0131040
      EP1D(6)     = -44.4D-10                                           P0131050
      BC2D(6,2)   = +1987.62D+1                                         P0131060
      BC2D(7,2)   = -2.54396621D+2                                      P0131070
      BC2D(1,3)   = +34.786529910234D-7                                 P0131080
      BC2D(2,3)   = -44.4D-10                                           P0131090
      CC3D(6,2,1) = +1987.62D+1                                         P0131100
      CC3D(7,2,1) = -2.54396621D+2                                      P0131110
      CC3D(1,1,2) = +34.786529910234D-07                                P0131120
      CC3D(2,1,2) = -44.4D-10                                           P0131130
C*****    ASSIGNMENT DF SIGNED DP CDNSTANTS (NO DECIMAL                 P0131140
C*****    PART) WITH SIGNED EXPONENT TO VARIABLES AND                   P0131150
C*****    ARRAY ELEMENTS                                                P0131160
      AADVD =  +0.D+1                                                   P0131170
      BBDVD =  -123.D+17                                                P0131180
      CCDVD =  +3692468.D-8                                             P0131190
      DDDVD =  -147937824967.D-5                                        P0131200
      EP1D(7)     = +0.D+1                                              P0131210
      EP1D(8)     = -123.D+17                                           P0131220
      EP1D(9)     = +3692468.D-8                                        P0131230
      EP1D(10)    = -147937824967.D-5                                   P0131240
      BC2D(3,3)   = +0.D+1                                              P0131250
      BC2D(4,3)   = -123.D+17                                           P0131260
      BC2D(5,3)   = +3692468.D-8                                        P0131270
      BC2D(6,3)   = -147937824967.D-5                                   P0131280
      CC3D(3,1,2) = +0.D+1                                              P0131290
      CC3D(4,1,2) = -123.D+17                                           P0131300
      CC3D(5,1,2) = +3692468.D-8                                        P0131310
      CC3D(6,1,2) = -147937824967.D-5                                   P0131320
C*****    ASSIGNMENT OF SIGNED DP CDNSTANTS (ND INTEGER                 P0131330
C*****    PART) WITH SIGNED EXPONENTS TD VARIABLES AND                  P0131340
C*****    ARRAY ELEMENTS                                                P0131350
      EEDVD = +.927786174985D+2                                         P0131360
      FFDVD = -.59354914223619D+0                                       P0131370
      GGDVD = +.98663271D-03                                            P0131380
      HHDVD = -.1D-15                                                   P0131390
      EP1D(11)    = +.927786174985D+2                                   P0131400
      EP1D(12)    = -.59354914223619D+0                                 P0131410
      EP1D(13)    = +.98663271D-03                                      P0131420
      EP1D(14)    = -.1D-15                                             P0131430
      BC2D(7,3)   = +.927786174985D+2                                   P0131440
      BC2D(1,4)   = -.59354914223619D+0                                 P0131450
      BC2D(2,4)   = +.98663271D-03                                      P0131460
      BC2D(3,4)   = -.1D-15                                             P0131470
      CC3D(7,1,2) = +.927786174985D+2                                   P0131480
      CC3D(1,2,2) = -.59354914223619D+0                                 P0131490
      CC3D(2,2,2) = +.98663271D-3                                       P0131500
      CC3D(3,2,2) = -.1D-15                                             P0131510
C*****    ASSIGNMENT OF SIGNED DP CONSTANTS (NO DECIMAL                 P0131520
C*****    PART) WITH UNSIGNED EXPONENTS TO VARIABLES                    P0131530
C*****    AND ARRAY ELEMENTS                                            P0131540
      PPDVD = +3261294675.D12                                           P0131550
      RRDVD = -969492909.D4                                             P0131560
      EP1D(15)    = +3261294675.D12                                     P0131570
      EP1D(16)    = -969492909.D4                                       P0131580
      BC2D(4,4)   = +3261294675.D12                                     P0131590
      BC2D(5,4)   = -969492909.D4                                       P0131600
      CC3D(4,2,2) = +3261294675.D12                                     P0131610
      CC3D(5,2,2) = -969492909.D4                                       P0131620
C*****    ASSIGNMENT OF SIGNED DP CONSTANTS (NO INTEGER                 P0131630
C*****    PART) WITH UNSIGNED EXPONENTS TO VARIABLES                    P0131640
C*****    AND ARRAY ELEMENTS                                            P0131650
      SSDVD = +.001246085D3                                             P0131660
      TTDVD = -.59D2                                                    P0131670
      EP1D(17)    = +.001246085D3                                       P0131680
      EP1D(18)    = -.59D2                                              P0131690
      BC2D(6,4)   = +.001246085D3                                       P0131700
      BC2D(7,4)   = -.59D2                                              P0131710
      CC3D(6,2,2) = +.001246085D3                                       P0131720
      CC3D(7,2,2) = -.59D2                                              P0131730
C*****    ASSIGNMENT OF DP CONSTANTS FORMED BY ADDING         5.1.1.3/42P0131740
C*****    UNSIGNED EXPONENTS TO UNSIGNED INTEGERS                       P0131750
      UUDVD = 798281392253D0                                            P0131760
      EP1D(19)    = 798281392253D0                                      P0131770
      FC2D(1,1)   = 798281392253D0                                      P0131780
      RC3D(1,1,1) = 798281392253D0                                      P0131790
C*****    ASSIGNMENT OF DP CONSTANTS FORMED BY ADDING                   P0131800
C*****    SIGNED EXPONENTS TO UNSIGNED INTEGERS                         P0131810
      VVDVD = 42921D+6                                                  P0131820
      WWDVD = 793685443D-4                                              P0131830
      EP1D(20)    = 42921D+6                                            P0131840
      EP1D(21)    = 793685443D-4                                        P0131850
      FC2D(2,1)   = 42921D+6                                            P0131860
      FC2D(3,1)   = 793685443D-4                                        P0131870
      RC3D(2,1,1) = 42921D+6                                            P0131880
      RC3D(3,1,1) = 793685443D-4                                        P0131890
C*****    ASSIGNMENT OF DP CONSTANTS FORMED BY ADDING                   P0131900
C*****    UNSIGNED EXPONENTS TO SIGNED INTEGERS                         P0131910
      XXDVD = +33344455566D2                                            P0131920
      YYDVD = -222333444D1                                              P0131930
      EP1D(22)    = +33344455566D2                                      P0131940
      EP1D(23)    = -222333444D1                                        P0131950
      FC2D(4,1)   = +33344455566D2                                      P0131960
      FC2D(5,1)   = -222333444D1                                        P0131970
      RC3D(1,2,1) = +33344455566D2                                      P0131980
      RC3D(2,2,1) = -222333444D1                                        P0131990
C*****    ASSIGNMENT OF DP CONSTANTS FORMED BY ADDING                   P0132000
C*****    SIGNED EXPONENTS TO SIGNED INTEGERS                           P0132010
      ZZDVD = +1D+1                                                     P0132020
      MCIVD = -2D+2                                                     P0132030
      MCJVD = +33333333333333D-3                                        P0132040
      MCKVD = -444444444D-4                                             P0132050
      EP1D(24)    = +1D+1                                               P0132060
      EP1D(25)    = -2D+2                                               P0132070
      EP1D(26)    = +33333333333333D-3                                  P0132080
      EP1D(27)    = -444444444D-4                                       P0132090
      FC2D(1,2)   = +1D+1                                               P0132100
      FC2D(2,2)   = -2D+2                                               P0132110
      FC2D(3,2)   = +33333333333333D-3                                  P0132120
      FC2D(4,2)   = -444444444D-4                                       P0132130
      RC3D(3,2,1) = +1D+1                                               P0132140
      RC3D(1,3,1) = -2D+2                                               P0132150
      RC3D(2,3,1) = +33333333333333D-3                                  P0132160
      RC3D(3,3,1) = -444444444D-4                                       P0132170
C*****    ASSIGNMENT OF UNSIGNED DP VARIABLES AND ARRAY       7.1.1.1/41P0132180
C*****    ELEMENTS TO DP VARIABLES AND ARRAY ELEMENTS                   P0132190
C*****    (BOTH PLUS AND MINUS VALUES ARE ASSIGNED IN THIS              P0132200
C*****    WAY)                                                          P0132210
      DPAVD = MCAVD                                                     P0132220
      DPBVD = DCVD                                                      P0132230
      DPCVD = EP1D(1)                                                   P0132240
      DPDVD = EP1D(2)                                                   P0132250
      DPEVD = BC2D(2,2)                                                 P0132260
      DPFVD = BC2D(4,2)                                                 P0132270
      DPGVD = CC3D(3,1,1)                                               P0132280
      DPHVD = CC3D(7,2,1)                                               P0132290
      EP1D(28) = DPAVD                                                  P0132300
      EP1D(29) = DPBVD                                                  P0132310
      EP1D(30) = EP1D(1)                                                P0132320
      EP1D(31) = EP1D(2)                                                P0132330
      EP1D(32) = BC2D(2,2)                                              P0132340
      EP1D(33) = BC2D(4,2)                                              P0132350
      EP1D(34) = CC3D(3,1,1)                                            P0132360
      EP1D(35) = CC3D(7,2,1)                                            P0132370
      FC2D(5,2) = DPAVD                                                 P0132380
      FC2D(1,3) = DPBVD                                                 P0132390
      FC2D(2,3) = EP1D(1)                                               P0132400
      FC2D(3,3) = EP1D(2)                                               P0132410
      FC2D(4,3) = BC2D(2,2)                                             P0132420
      FC2D(5,3) = BC2D(4,2)                                             P0132430
      FC2D(1,4) = CC3D(3,1,1)                                           P0132440
      FC2D(2,4) = CC3D(7,2,1)                                           P0132450
      RC3D(1,1,2) = MCAVD                                               P0132460
      RC3D(2,1,2) = DCVD                                                P0132470
      RC3D(3,1,2) = EP1D(1)                                             P0132480
      RC3D(1,2,2) = EP1D(2)                                             P0132490
      RC3D(2,2,2) = BC2D(2,2)                                           P0132500
      RC3D(3,2,2) = BC2D(4,2)                                           P0132510
      RC3D(1,3,2) = CC3D(3,1,1)                                         P0132520
      RC3D(2,3,2) = CC3D(7,2,1)                                         P0132530
C*****    ASSIGNMENT OF SIGNED DP VARIABLES AND ARRAY                   P0132540
C*****    ELEMENTS TO DP VARIABLES AND ARRAY ELEMENTS                   P0132550
C*****    (UNARY MINUS USED TO REVERSE BOTH PLUS AND          6.4    /44P0132560
C*****    MINUS VALUES)                                                 P0132570
      DPIVD = -GCVD                                                     P0132580
      DPJVD = -DDDVD                                                    P0132590
      DPKVD = -AC1D(3)                                                  P0132600
      DPLVD = -EP1D(10)                                                 P0132610
      DPMVD = -BC2D(3,1)                                                P0132620
      DPNVD = -BC2D(2,4)                                                P0132630
      DPOVD = -CC3D(2,1,1)                                              P0132640
      DPPVD = -CC3D(2,1,2)                                              P0132650
      EP1D(36) = -GCVD                                                  P0132660
      EP1D(37) = -DDDVD                                                 P0132670
      EP1D(38) = -AC1D(3)                                               P0132680
      EP1D(39) = -EP1D(10)                                              P0132690
      EP1D(40) = -BC2D(3,1)                                             P0132700
      EP1D(41) = -BC2D(2,4)                                             P0132710
      EP1D(42) = -CC3D(2,1,1)                                           P0132720
      EP1D(43) = -CC3D(2,1,2)                                           P0132730
      FC2D(3,4) = -GCVD                                                 P0132740
      FC2D(4,4) = -DDDVD                                                P0132750
      FC2D(5,4) = -AC1D(3)                                              P0132760
      FC2D(1,5) = -EP1D(10)                                             P0132770
      FC2D(2,5) = -BC2D(3,1)                                            P0132780
      FC2D(3,5) = -BC2D(2,4)                                            P0132790
      FC2D(4,5) = -CC3D(2,1,1)                                          P0132800
      FC2D(5,5) = -CC3D(2,1,2)                                          P0132810
      RC3D(3,3,2) = -GCVD                                               P0132820
      RC3D(1,1,3) = -DDDVD                                              P0132830
      RC3D(2,1,3) = -AC1D(3)                                            P0132840
      RC3D(3,1,3) = -EP1D(10)                                           P0132850
      RC3D(1,2,3) = -BC2D(3,1)                                          P0132860
      RC3D(2,2,3) = -BC2D(2,4)                                          P0132870
      RC3D(3,2,3) = -CC3D(2,1,1)                                        P0132880
      RC3D(1,3,3) = -CC3D(2,1,2)                                        P0132890
C*****    WRITE RESULTS FOR THIS SEGMENT                                P0132900
      WRITE (NUVI,132) MCAVD, AC1D(1), BC2D(1,1), CC3D(1,1,1), MCBVD,   P0132910
     A    AC1D(2), BC2D(2,1), CC3D(2,1,1), MCCVD, AC1D(3), BC2D(3,1),   P0132920
     B    CC3D(3,1,1), MCDVD, AC1D(4), BC2D(4,1), CC3D(4,1,1), MCEVD,   P0132930
     C    AC1D(5), BC2D(5,1), CC3D(5,1,1), MCFVD, AC1D(6), BC2D(6,1),   P0132940
     D    CC3D(6,1,1), MCGVD, AC1D(7), BC2D(7,1), CC3D(7,1,1), MCHVD,   P0132950
     E    AC1D(8), BC2D(1,2), CC3D(1,2,1), ACVD, AC1D(9), BC2D(2,2),    P0132960
     F    CC3D(2,2,1), BCVD, AC1D(10), BC2D(3,2), CC3D(3,2,1), CCVD,    P0132970
     G    EP1D(1) , BC2D(4,2), CC3D(4,2,1), DCVD, EP1D(2) , BC2D(5,2),  P0132980
     H    CC3D(5,2,1), ECVD, EP1D(3) , BC2D(6,2), CC3D(6,2,1), FCVD,    P0132990
     I    EP1D(4) , BC2D(7,2), CC3D(7,2,1), GCVD, EP1D(5) , BC2D(1,3),  P0133000
     J    CC3D(1,1,2), HCVD, EP1D(6) , BC2D(2,3), CC3D(2,1,2), AADVD,   P0133010
     K    EP1D(7) , BC2D(3,3), CC3D(3,1,2), BBDVD, EP1D(8) , BC2D(4,3), P0133020
     L    CC3D(4,1,2), CCDVD, EP1D(9) , BC2D(5,3), CC3D(5,1,2), DDDVD,  P0133030
     M    EP1D(10), BC2D(6,3), CC3D(6,1,2)                              P0133040
      WRITE (NUVI,133) EEDVD, EP1D(11), BC2D(7,3), CC3D(7,1,2), FFDVD,  P0133050
     1    EP1D(12), BC2D(1,4), CC3D(1,2,2),GGDVD, EP1D(13), BC2D(2,4),  P0133060
     2    CC3D(2,2,2), HHDVD, EP1D(14), BC2D(3,4), CC3D(3,2,2), PPDVD,  P0133070
     3    EP1D(15),  BC2D(4,4), CC3D(4,2,2), RRDVD, EP1D(16),BC2D( 5,4),P0133080
     4    CC3D(5,2,2),SSDVD, EP1D(17), BC2D(6,4), CC3D(6,2,2), TTDVD,   P0133090
     5    EP1D(18), BC2D(7,4), CC3D(7,2,2)                              P0133100
      WRITE (NUVI,134) UUDVD, EP1D(19), FC2D(1,1), RC3D(1,1,1), VVDVD,  P0133110
     1    EP1D(20), FC2D(2,1), RC3D(2,1,1), WWDVD, EP1D(21), FC2D(3,1), P0133120
     2    RC3D(3,1,1), XXDVD, EP1D(22), FC2D(4,1), RC3D(1,2,1), YYDVD,  P0133130
     3    EP1D(23), FC2D(5,1), RC3D(2,2,1), ZZDVD, EP1D(24), FC2D(1,2), P0133140
     4    RC3D(3,2,1), MCIVD, EP1D(25), FC2D(2,2), RC3D(1,3,1), MCJVD,  P0133150
     5    EP1D(26), FC2D(3,2), RC3D(2,3,1), MCKVD, EP1D(27), FC2D(4,2), P0133160
     6    RC3D(3,3,1)                                                   P0133170
      WRITE (NUVI,135) MCAVD, DPAVD, EP1D(28), FC2D(5,2), RC3D(1,1,2),  P0133180
     A    DCVD, DPBVD, EP1D(29), FC2D(1,3), RC3D(2,1,2), EP1D(1),       P0133190
     B    DPCVD, EP1D(30), FC2D(2,3), RC3D(3,1,2), EP1D(2), DPDVD,      P0133200
     C    EP1D(31), FC2D(3,3), RC3D(1,2,2), BC2D(2,2), DPEVD, EP1D(32), P0133210
     D    FC2D(4,3), RC3D(2,2,2), BC2D(4,2), DPFVD, EP1D(33), FC2D(5,3),P0133220
     E    RC3D(3,2,2), CC3D(3,1,1), DPGVD, EP1D(34), FC2D(1,4),         P0133230
     F    RC3D(1,3,2), CC3D(7,2,1), DPHVD, EP1D(35), FC2D(2,4),         P0133240
     G    RC3D(2,3,2), GCVD, DPIVD, EP1D(36), FC2D(3,4), RC3D(3,3,2),   P0133250
     H    DDDVD, DPJVD, EP1D(37), FC2D(4,4), RC3D(1,1,3), AC1D(3),      P0133260
     I    DPKVD, EP1D(38), FC2D(5,4), RC3D(2,1,3), EP1D(10), DPLVD,     P0133270
     J    EP1D(39), FC2D(1,5), RC3D(3,1,3), BC2D(3,1), DPMVD, EP1D(40), P0133280
     K    FC2D(2,5), RC3D(1,2,3), BC2D(2,4), DPNVD, EP1D(41), FC2D(3,5),P0133290
     L    RC3D(2,2,3), CC3D(2,1,1), DPOVD, EP1D(42), FC2D(4,5),         P0133300
     M    RC3D(3,2,3), CC3D(2,1,2), DPPVD, EP1D(43), FC2D(5,5),         P0133310
     N    RC3D(1,3,3)                                                   P0133320
132   FORMAT   (/ 6X,8H0.34D+02/4(D14.2/)/                              P0133330
     A            6X,19H0.1234567891011D+08/4(D25.13/)/                 P0133340
     B            6X,15H0.298765234D-01/4(D21.9/)/                      P0133350
     C            6X,17H0.34510000555D+07/4(D23.11/)/                   P0133360
     D            6X,14H0.22232425D+08/4(D20.8/)/                       P0133370
     E            6X,12H0.281420D+05/4(D18.6/)/                         P0133380
     F            6X,16H0.4455667788D+16/4(D22.10/),                    P0133390
     G        1H1,5X,20H0.35692483569248D+12/4(D26.14/)/                P0133400
     H            6X,13H0.6549876D-03/4(D19.7/)/                        P0133410
     I            6X,8H0.78D+10/4(D14.2/)/                              P0133420
     J            6X,7H0.0D+00/4(D13.1/)/                               P0133430
     K            5X,16H-0.172635445D+11/4(D21.9/)/                     P0133440
     L            6X,12H0.198762D+05/4(D18.6/)/                         P0133450
     M            5X,16H-0.254396621D+03/4(D21.9/)/                     P0133460
     N            6X,20H0.34786529910234D-05/4(D26.14/)/                P0133470
     O            5X,10H-0.444D-08/4(D15.3/),                           P0133480
     P        1H1,5X,7H0.0D+00/4(D13.1/)/                               P0133490
     Q            5X,10H-0.123D+20/4(D15.3/)/                           P0133500
     R            6X,13H0.3692468D-01/4(D19.7/)/                        P0133510
     S            5X,19H-0.147937824967D+07/4(D24.12/),1H )             P0133520
133   FORMAT   (  6X,18H0.927786174985D+02/4(D24.12/)/                  P0133530
     T            5X,21H-0.59354914223619D+00/4(D26.14/)/               P0133540
     U            6X,14H0.98663271D-03/4(D20.8/)/                       P0133550
     V            5X,8H-0.1D-15/4(D13.1/)/                              P0133560
     W            6X,16H0.3261294675D+22/4(D22.10/),                    P0133570
     X        1H1,4X,16H-0.969492909D+13/4(D21.9/))/                    P0133580
     Y            6X,13H0.1246085D+01/4(D19.7/)/                        P0133590
     Z            5X,9H-0.59D+02/4(D14.2/),1H )                         P0133600
134   FORMAT   (  6X,18H0.798281392253D+12/4(D24.12/)/                  P0133610
     1            6X,11H0.42921D+11/4(D17.5/)/                          P0133620
     2            6X,15H0.793685443D+05/4(D21.9/)/                      P0133630
     3            6X,17H0.33344455566D+13/4(D23.11/)/                   P0133640
     4            5X,16H-0.222333444D+10/4(D21.9/)/                     P0133650
     5            6X,7H0.1D+02/4(D13.1/),                               P0133660
     6        1H1,4X,8H-0.2D+03/4(D13.1/)/                              P0133670
     7            6X,20H0.33333333333333D+11/4(D26.14/)/                P0133680
     8            5X,16H-0.444444444D+05/4(D21.9/),1H )                 P0133690
135   FORMAT( 6X,20H0.34000000000000D+02/5(D26.14/)/                    P0133700
     1       5X,21H-0.17263544500000D+11/5(D26.14/)/                    P0133710
     2       6X,20H0.00000000000000D+00/5(D26.14/)/                     P0133720
     3       5X,21H-0.17263544500000D+11/5(D26.14/)/                    P0133730
     4       6X,20H0.65498760000000D-03/5(D26.14/),                     P0133740
     5   1H1,5X,20H0.00000000000000D+00/5(D26.14/))/                    P0133750
     6       6X,20H0.29876523400000D-01/5(D26.14/)/                     P0133760
     7       5X,21H-0.25439662100000D+03/5(D26.14/),                    P0133770
     8 39H1 EACH GROUP SHOULD BE IDENTICAL EXCEPT/                      P0133780
     9 38H  FOR THE SIGNS OF THE FIRST TWO LINES//                      P0133790
     A       6X,20H0.34786529910234D-05/5(D26.14/)/                     P0133800
     B       5X,21H-0.14793782496700D+07/5(D26.14/)/                    P0133810
     C       6X,20H0.29876523400000D-01/5(D26.14/)/                     P0133820
     D       5X,21H-0.14793782496700D+07/5(D26.14/)/                    P0133830
     E       6X,20H0.29876523400000D-01/5(D26.14/)/                     P0133840
     F       6X,20H0.98663271000000D-03/5(D26.14/)/                     P0133850
     G       6X,20H0.12345678910110D+08/5(D26.14/),                     P0133860
     H   1H1,4X,21H-0.44400000000000D-08/5(D26.14/))                    P0133870
C*****    END OF SEGMENT 013                                            P0133880
C*****  WHEN EXECUTING ONLY SEGMENT 013, THE STOP AND END CARDS         P0133890
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0133900
C*****  IN COLUMNS  1  AND  2  REMOVED                                  P0133910
C=    STOP                                                              P0133920
C=    END                                                               P0133930
      STOP                                                              P013C1
      END                                                               P013C2
C***********************************************************************P0150010
C*****                                                                  P0150020
C*****                       CASGN - (015)                              P0150030
C*****                                                                  P0150040
C***********************************************************************P0150050
C*****  GENERAL PURPOSE                                         ASA REF P0150060
C*****  * TO TEST METHODS OF FORMING COMPLEX CONSTANTS        5.1.1     P0150070
C*****  * TO TEST THAT COMPLEX VARIABLES AND ARRAY            5.1.2 /5  P0150080
C*****    ELEMENTS MAY BE REFERENCED.                         5.1.3 /16 P0150090
C*****  * TO TEST SIMPLE ARITHMETIC ASSIGNMENT STATEMENTS     7.1.1.1   P0150100
C*****    SO THAT THIS FEATURE CAN BE USED FOR INITIALIZATION TABLE 1   P0150110
C*****    IN LATER SEGMENTS                                             P0150120
C*****  S P E C I F I C A T I O N S  SEGMENT 015                        P0150130
C*****                                                                  P0010310
C*****  WHEN EXECUTING ONLY SEGMENT 015, THE SPECIFICATION STATEMENTS   P0010315
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C= IN COLUMNS            P0010320
C*****  1  AND  2  REMOVED.                                             P0010325
C*****                                                                  P0010330
C=    COMPLEX QEVC,QFVC,QGVC,QHVC,QIVC,QJVC,QKVC,QLVC,QMVC,QNVC,QOVC,   P0010335
C=   1  QPVC,QRVC,QSVC,QTVC,QUVC,QVVC,KVC,LVC,MVC,NVC,OVC,PVC,QVC,VVC,  P0010340
C=   2  MEVC,MFVC,MGVC,MHVC,MIVC,QQVC,MJVC,MKVC,MLVC,     MNVC,MOVC,    P0010345
C=   3  MPVC,MQVC,MRVC,MSVC,MTVC,MUVC,MVVC,BCVC,DCVC,DDVC               P0010350
C=    COMPLEX AVC,BVC,CVC,DVC,EVC,FVC,GVC,HVC,IVC,JVC,AAVC,             P0010355
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C=    1           ABVC,BAVC,BBVC,CCVC,CDVC,CAVC,DAVC,ASVC,BSVC,CSVC,            P0010360
C=    2           DSVC,AAAVC,ABAVC,ACAVC,ADAVC,CHCVC                            P0010365
C=     COMPLEX NUMVC,       QAVC,QBVC,QCVC,QDVC,RVC,SVC,TVC,UVC                P0010370
C=    1 ,         MAVC,MBVC,MCVC,MDVC,B1C(8),B2C(4,2),B3C(2,2,2)               P0010375
C=     COMPLEX LL1C(32),LM2C(8,4),LN3C(9,2,2),A1C(12),A2C(2,2),A3C(2,2,1)P0010380
C*****                                                                          P0010385
       COMPLEX QEVC,QFVC,QGVC,QHVC,QIVC,QJVC,QKVC,QLVC,QMVC,QNVC,QOVC,          P015A1
      1  QPVC,QRVC,QSVC,QTVC,QUVC,QVVC,KVC,LVC,MVC,NVC,OVC,PVC,QVC,VVC,         P015A2
      2  MEVC,MFVC,MGVC,MHVC,MIVC,QQVC,MJVC,MKVC,MLVC,      MNVC,MOVC,          P015A3
      3  MPVC,MQVC,MRVC,MSVC,MTVC,MUVC,MVVC,BCVC,DCVC,DDVC                      P015A4
       COMPLEX AVC,BVC,CVC,DVC,EVC,FVC,GVC,HVC,IVC,JVC,AAVC,                    P015A5
      1           ABVC,BAVC,BBVC,CCVC,CDVC,CAVC,DAVC,ASVC,BSVC,CSVC,            P015A6
      2           DSVC,AAAVC,ABAVC,ACAVC,ADAVC,CHCVC                            P015A7
       COMPLEX NUMVC,       QAVC,QBVC,QCVC,QDVC,RVC,SVC,TVC,UVC                 P015A8
      1 ,         MAVC,MBVC,MCVC,MDVC,B1C(8),B2C(4,2),B3C(2,2,2)                P015A9
       COMPLEX LL1C(32),LM2C(8,4),LN3C(9,2,2),A1C(12),A2C(2,2),A3C(2,2,1)P015AA
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.           P0150140
C*****                                                                          P0070260
C*****  WHEN EXECUTING ONLY SEGMENT 015, THE FOLLOWING STATEMENT                P0070265
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1  AND  2  REMOVED.               P0070270
C*****                                                                          P0070275
C=     NUVI = 6                                                                 P0070280
C*****                                                                          P0070285
       NUVI = 6                                                                 P015B1
       WRITE (NUVI,150)                                                         P0150150
       WRITE (NUVI,151)                                                         P0150160
150    FORMAT(1H1,1X,32HCASGN - (015) COMPLEX ASSIGNMENT/                       P0150170
     1 16X, 10HSTATEMENTS/2X,28HASA REFS. - 5.1.1.4  7.1.1.1//                  P0150180
     2 2X, 7HRESULTS//2X,23HLINE 1 OF EACH GROUP IS/                            P0150190
     3 2X,21HHOLLERITH INFORMATION/)                                            P0150200
151    FORMAT(2X,36HVALUES IN A GROUP SHOULD BE THE SAME)                       P0150210
C*****    HEADER FOR SEGMENT 015 WRITTEN                                        P0150220
C*****  BEGINNING OF TEST OF COMPLEX CONSTANT ASSIGNMENTS. IN                   P0150230
C*****  THE FOLLOWING 22 BLOCKS, BOTH PARTS OF THE CONSTANT                     P0150240
C*****  HAVE THE SAME METHOD OF FORMATION                                       P0150250
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM                      P0150260
C*****    UNSIGNED BASIC REAL CONSTANTS                                         P0150270
       QAVC = (22.2,33.33)                                                      P0150280
       LL1C(1)      = (22.2,33.33)                                              P0150290
       LM2C(1,1)    = (22.2,33.33)                                              P0150300
       LN3C(1,1,1) = (22.2,33.33)                                               P0150310
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM                      P0150320
C*****    SIGNED BASIC REAL CONSTANTS                                           P0150330
       QBVC = (+395.6,+4106.7)                                                  P0150340
       QCVC  = (-12345.67,-1234.567)                                            P0150350
       QDVC  = (+8.9,-9.1)                                                      P0150360
       QEVC  = (-2635.12,+46.21)                                                P0150370
       LL1C(2)      = (+395.6,+4106.7)                                          P0150380
       LL1C(3)      = (-12345.67,-1234.567)                                     P0150390
       LL1C(4)      = (+8.9,-9.1)                                               P0150400
       LL1C(5)      = (-2635.12,+46.21)                                         P0150410
       LM2C(2,1)    = (+395.6,+4106.7)                                          P0150420
       LM2C(3,1)    = (-12345.67,-1234.567)                                     P0150430
       LM2C(4,1)    = (+8.9,-9.1)                                               P0150440
       LM2C(5,1)    = (-2635.12,+46.21)                                         P0150450
       LN3C(2,1,1) = (+395.6,+4106.7)                                           P0150460
       LN3C(3,1,1) = (-12345.67,-1234.567)                                      P0150470
       LN3C(4,1,1) = (+8.9,-9.1)                                                P0150480
       LN3C(5,1,1) = (-2635.12,+46.21)                                          P0150490
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM                      P0150500
C*****    UNSIGNED AND SIGNED REAL CONSTANTS (INTEGER PART                      P0150510
C*****    ONLY)                                                                 P0150520
       QFVC  = (10.,20.)                                                        P0150530
       QGVC  = (+300.,+4000.)                                                   P0150540
       QHVC  = (-50.,-600.)                                                     P0150550
       QIVC  = (+71.,-92.)                                                      P0150560
       QJVC  = (-883.,+1414.)                                                   P0150570
       QKVC  = (10.,+562.)                                                      P0150580
      QLVC   = (2002.,-983.)                                            P0150590
      QMVC   = (+461.,-165.)                                            P0150600
      QNVC   = (-21.,+122.)                                             P0150610
      LL1C(6)     = (10.,20.)                                           P0150620
      LM2C(6,1)   = (+300.,+4000.)                                      P0150630
      LN3C(6,1,1) = (-50.,-600.)                                        P0150640
      LL1C(7)     = (+71.,-92.)                                         P0150650
      LM2C(7,1)   = (-883.,+1414.)                                      P0150660
      LN3C(7,1,1) = (10.,+562.)                                         P0150670
      LL1C(8)     = (2002.,-983.)                                       P0150680
      LM2C(8,1)   = (+461.,-165.)                                       P0150690
      LN3C(8,1,1) = (-21.,+122.)                                        P0150700
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0150710
C*****    UNSIGNED AND SIGNED REAL CONSTANTS (DECIMAL PART              P0150720
C*****    ONLY                                                          P0150730
      QOVC  = (.001,.00200)                                             P0150740
      QPVC  = (+.562,+.562)                                             P0150750
      QQVC  = (-.3,-.3333333)                                           P0150760
      QRVC  = (+.4,-.445)                                               P0150770
      QSVC  = (-.95,+.95)                                               P0150780
      QTVC  = (.0164239,+.36)                                           P0150790
      QUVC  = (.21,-.3963)                                              P0150800
      QVVC  = (+.3398,.3398)                                            P0150810
      NUMVC = (-.6,.6)                                                  P0150820
      LL1C(9)     = (.001,.00200)                                       P0150830
      LM2C(1,2)   = (+.562,+.562)                                       P0150840
      LN3C(1,2,1) = (-.3,-.3333333)                                     P0150850
      LL1C(10)    = (+.4,-.445)                                         P0150860
      LM2C (2,2) = (-.95, +.95)                                         P0150870
      LN3C(2,2,1) = (.0164239,+.36)                                     P0150880
      LL1C(11)    = (.21,-.3963)                                        P0150890
      LM2C(3,2)   = (+.3398,.3398)                                      P0150900
      LN3C(3,2,1) = (-.6,.6)                                            P0150910
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0150920
C*****    UNSIGNED REAL CONSTANTS WITH UNSIGNED EXPONENTS               P0150930
      AVC   = (0.0E0,1.0E0)                                             P0150940
      LL1C(12)    = (456231.1E1,789.453E3)                              P0150950
      LM2C(4,2)   = (44.9E4,2.5E3)                                      P0150960
      LN3C(4,2,1) = (2222.3E3,333.2E2)                                  P0150970
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0150980
C*****    UNSIGNED REAL CONSTANTS WITH SIGNED EXPONENTS                 P0150990
      BVC  = (3.0E+0,3.0E+0)                                            P0151000
      CVC  = (987654.3E-1,876543.2E-2)                                  P0151010
      DVC  = (4.444E+3,55.555E-4)                                       P0151020
      EVC  = (6.0E-5,7.7E+6)                                            P0151030
      LL1C(13)    = (3.0E+0,3.0E+0)                                     P0151040
      LM2C(5,2)   = (987654.3E-1,876543.2E-2)                           P0151050
      LN3C(5,2,1) = (4.444E+3,55.555E-4)                                P0151060
      LL1C(14)    = (6.0E-5,7.7E+6)                                     P0151070
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151080
C*****    SIGNED REAL CONSTANTS WITH UNSIGNED EXPONENTS                 P0151090
      FVC  = (+14.2E1,+26.67E0)                                         P0151100
      GVC  = (-36.923E4,-0.234E03)                                      P0151110
      HVC  = (+2.1E2,-2.1E2)                                            P0151120
      IVC  = (-595.9E00,+4.967E2)                                       P0151130
      LM2C(6,2)   = (+14.2E1,+26.67E0)                                  P0151140
      LN3C(6,2,1) = (-36.923E4,-0.234E03)                               P0151150
      LL1C(15)    = (+2.1E2,-2.1E2)                                     P0151160
      LM2C(7,2)   = (-595.9E00,+4.967E2)                                P0151170
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151180
C*****    SIGNED REAL CONSTANTS WITH SIGNED EXPONENTS                   P0151190
      JVC  = (+1.0E+0,+1.0E+0)                                          P0151200
      KVC  = (-2.0E-0,-2.0E-0)                                          P0151210
      LVC  = (+49.2E-1,-65.27E+2)                                       P0151220
      MVC  = (-737.1E+3,+99.8E-3)                                       P0151230
      NVC  = (+4774.47E+03,-9362.4E-4)                                  P0151240
      OVC  = (-846.2E-5,+13.33E+1)                                      P0151250
      LN3C(7,2,1) = (+1.0E+0,+1.0E+0)                                   P0151260
      LL1C(16)    = (-2.0E-0,-2.0E-0)                                   P0151270
      LM2C(1,3)   = (+49.2E-1,-65.27E+2)                                P0151280
      LN3C(1,1,2) = (-737.1E+3,+99.8E-3)                                P0151290
      LL1C(17)    = (+4774.47E+03,-9362.4E-4)                           P0151300
      LM2C(2,3)   = (-846.2E-5,+13.33E+1)                               P0151310
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151320
C*****    UNSIGNED REAL CONSTANTS (NO DECIMAL PART) WITH                P0151330
C*****    UNSIGNED EXPONENTS                                            P0151340
      PVC  = (77.E7,816248.E2)                                          P0151350
      LL1C(18)    = (77.E7,816248.E2)                                   P0151360
      LM2C(3,3)   = (1334.E01,379.E03)                                  P0151370
      LN3C(2,1,2) = (1334.E01,379.E03)                                  P0151380
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151390
C*****    UNSIGNED REAL CONSTANTS (NO DECIMAL PART) WITH                P0151400
C*****    SIGNED EXPONENTS                                              P0151410
      QVC  = (3.E+5,3.E+05)                                             P0151420
      RVC  = (299.E-4,299.E-1)                                          P0151430
      SVC  = (1419.E+2,1419.E-2)                                        P0151440
      TVC  = (76.E-3,987.E+0)                                           P0151450
      LL1C(19)    = (3.E+05,3.E+5)                                      P0151460
      LM2C(4,3)   = (299.E-4,299.E-1)                                   P0151470
      LN3C(3,1,2) = (1419.E+2,1419.E-2)                                 P0151480
      LL1C(20) = (76.E-3, 987.E+0)                                      P0151490
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151500
C*****    SIGNED REAL CONSTANTS (NO DECIMAL PART) WITH                  P0151510
C*****    UNSIGNED EXPONENTS                                            P0151520
      UVC  = (+31.E0,+4659.E1)                                          P0151530
      VVC  = (-728.E2,-93296.E3)                                        P0151540
      MAVC = (+6.E6,-6.E6)                                              P0151550
      MBVC = (-7914.E3,+16.E5)                                          P0151560
      LM2C(5,3)   = (+31.E0,+4659.E1)                                   P0151570
      LN3C(4,1,2) = (-728.E2,-93296.E3)                                 P0151580
      LL1C(21)    = (+6.E6,-6.E6)                                       P0151590
      LM2C(6,3)   = (-7914.E3,+16.E5)                                   P0151600
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151610
C*****    SIGNED REAL CONSTANTS (NO DECIMAL PART) WITH                  P0151620
C*****    SIGNED EXPONENTS                                              P0151630
      MCVC = (+1.E+1,+1.E+1)                                            P0151640
      MDVC = (-2.E-2,-2.E-2)                                            P0151650
      MEVC = (+3.E-3,-3.E+3)                                            P0151660
      MFVC = (-4.E+4,+4.E-4)                                            P0151670
      MGVC = (+5.E+5,-5.E-5)                                            P0151680
      MHVC = (-6.E-6,+6.E+6)                                            P0151690
      LN3C(5,1,2) = (+1.E+1,+1.E+1)                                     P0151700
      LL1C(22)    = (-2.E-2,-2.E-2)                                     P0151710
      LM2C(7,3)   = (+3.E-3,-3.E+3)                                     P0151720
      LN3C(6,1,2) = (-4.E+4,+4.E-4)                                     P0151730
      LL1C(23)    = (+5.E+5,-5.E-5)                                     P0151740
      LM2C(1,4)   = (-6.E-6,+6.E+6)                                     P0151750
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151760
C*****    UNSIGNED REAL CONSTANTS (NO INTEGER PART) WITH                P0151770
C*****    UNSIGNED EXPONENTS                                            P0151780
      MIVC = (.39393E01,.62E04)                                         P0151790
      LL1C(24)    = (.39393E01,.62E04)                                  P0151800
      LM2C(2,4)   = (.009E2,.765765E3)                                  P0151810
      LN3C(7,1,2) = (.009E2,.765765E3)                                  P0151820
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151830
C*****    UNSIGNED REAL CONSTANTS (NO INTEGER PART) WITH                P0151840
C*****    SIGNED EXPONENTS                                              P0151850
      MJVC =(.352E+09,.352E+3)                                          P0151860
      MKVC =(.147626E+0,.891E-14)                                       P0151870
      MLVC =(.9E-7,.9999E+8)                                            P0151880
      MNVC =(.13E-04,.13E-04)                                           P0151890
      LL1C(25)    =(.352E+09,.352E+3)                                   P0151900
      LM2C(3,4)   =(.147626E+0,.891E-14)                                P0151910
      LN3C(1,2,2) =(.9E-7,.9999E+8)                                     P0151920
      LN3C(2,2,2) =(.13E-4,.13E-4)                                      P0151930
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0151940
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C*****    SIGNED REAL CONSTANTS (NO INTEGER PART) WITH                  P0151950
C*****    UNSIGNED EXPONENTS                                            P0151960
      MOVC =(+.77E00,+.77E00)                                           P0151970
      MPVC =(+.878E1,-.878E1)                                           P0151980
      MQVC =(-.9797E2,+.9797E2)                                         P0151990
      MRVC =(-.10101E15,-.10101E15)                                     P0152000
      LL1C(26)    =(+.77E00,+.77E00)                                    P0152010
      LM2C(4,4)   =(+.878E1,-.878E1)                                    P0152020
      LN3C(3,2,2) =(-.9797E2,+.9797E2)                                  P0152030
      LN3C(4,2,2) =(-.10101E15,-.10101E15)                              P0152040
C*****    TEST ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM              P0152050
C*****    SIGNED REAL CONSTANTS (NO INTEGER PART) WITH                  P0152060
C*****    SIGNED EXPONENTS                                              P0152070
      MSVC =(+.68E+12,+.357628E+0)                                      P0152080
      MTVC =(+.798E-3,+.76444E-00)                                      P0152090
      MUVC =(-.3247E+20,-.2594E+5)                                      P0152100
      MVVC =(-.43599E-19,-.12E-4)                                       P0152110
      AAVC =(-.6E-9,-.6E+9)                                             P0152120
      ABVC =(-.9119E+6,+.9119E-6)                                       P0152130
      BAVC =(+.39426E+2,-.39426E-2)                                     P0152140
      BBVC =(+.45E-12,+.45E+12)                                         P0152150
      LL1C(27)    =(+.68E+12,+.357628E+0)                               P0152160
      LM2C(5,4)   =(+.798E-3,+.76444E-00)                               P0152170
      LN3C(5,2,2) =(-.3247E+20,-.2594E+5)                               P0152180
      LL1C(28)    =(-.43599E-19,-.12E-4)                                P0152190
      LM2C(6,4)   =(-.6E-9,-.6E+9)                                      P0152200
      LN3C(6,2,2) =(-.9119E+6,+.9119E-6)                                P0152210
      LM2C(7,4)   =(+.39426E+2,-.39426E-2)                              P0152220
      LN3C(7,2,2) =(+.45E-12,+.45E+12)                                  P0152230
C*****  ASSIGNMENT OF COMPLEX CONSTANTS FORMED FROM SIGNED AND UNSIGNED P0152240
C*****  INTEGER CONSTANTS WITH SIGNED AND UNSIGNED EXPONENTS            P0152250
      BCVC = (+4793E+2,3479E2)                                          P0152260
      OOVC = (3682E-3,8236E-2)                                          P0152270
      OCVC = (-2571E5,+1752E+5)                                         P0152280
      CHCVC = (+1460E-4,-1064E+01)                                      P0152290
      A1C(5) = (4793E2,3479E+2)                                         P0152300
      A1C(6) = (3682E-03,+8236E-02)                                     P0152310
      A1C(7) = (-2571E+5,1752E+05)                                      P0152320
      A1C(8) = (1460E-4,-1064E1)                                        P0152330
      LM2C(8,2) = (4793E+2,+3479E+2)                                    P0152340
      LN3C(8,2,1) = (+3682E-3,8236E-02)                                 P0152350
      LN3C(8,2,2) = (-2571E+05,1752E5)                                  P0152360
      LN3C(8,1,2) = (1460E-04,-1064E+1)                                 P0152370
C*****    ASSIGNMENT OF COMPLEX VARIABLES AND ARRAY ELEMENTS            P0152380
C*****    TO COMPLEX VARIABLES ANO ARRAY ELEMENTS                       P0152390
      CCVC = QTVC                                                       P0152400
      CDVC = LL1C(12)                                                   P0152410
      CAVC = LM2C(1,4)                                                  P0152420
      OAVC = LN3C(6,2,2)                                                P0152430
      A1C(1) = CCVC                                                     P0152440
      A1C(2) = LL1C(12)                                                 P0152450
      A1C(3) = LM2C(1,4)                                                P0152460
      A1C(4) = LN3C(6,2,2)                                              P0152470
      A2C(1,1) = QTVC                                                   P0152480
      A2C(2,1) = LL1C(12)                                               P0152490
      A2C(1,2) = LM2C(1,4)                                              P0152500
      A2C(2,2) = LN3C(6,2,2)                                            P0152510
      A3C(1,1,1) = CCVC                                                 P0152520
      A3C(2,1,1) = LL1C(12)                                             P0152530
      A3C(1,2,1) = LM2C(1,4)                                            P0152540
      A3C(2,2,1) = LN3C(6,2,2)                                          P0152550
C*****    ASSIGNMENT OF COMPLEX VARIABLES AND ARRAY ELEMENTS            P0152560
C*****    TO COMPLEX VARIABLES AND ARRAY ELEMENTS (UNARY          6.4/44P0152570
C*****    MINUS USEO TO REVERSE BOTH PLUS AND MINUS VALUES)             P0152580
      ASVC = - QGVC                                                     P0152590
      BSVC = - QHVC                                                     P0152600
      CSVC = - LL1C(26)                                                 P0152610
      OSVC = - LL1C(23)                                                 P0152620
      AAAVC = - LM2C(1,3)                                               P0152630
      AAAVC = - LM2C(1,3)                                               P0152640
      ABAVC = - LM2C(1,4)                                               P0152650
      ACAVC = - LN3C(5,2,1)                                             P0152660
      ADAVC = - LN3C(6,2,1)                                             P0152670
      B1C(1) = - QGVC                                                   P0152680
      B1C(2) = - QHVC                                                   P0152690
      B1C(3) = - LL1C(26)                                               P0152700
      B1C(4) = - LL1C(23)                                               P0152710
      B1C(5) = - LM2C(1,3)                                              P0152720
      B1C(6) = - LM2C(1,4)                                              P0152730
      B1C(7) = - LN3C(5,2,1)                                            P0152740
      B1C(8) = - LN3C(6,2,1)                                            P0152750
      B2C(1,1) = - QGVC                                                 P0152760
      B2C(2,1) = - QHVC                                                 P0152770
      B2C(3,1) = - LL1C(26)                                             P0152780
      B2C(4,1) = - LL1C(23)                                             P0152790
      B2C(1,2) = - LM2C(1,3)                                            P0152800
      B2C(2,2) = - LM2C(1,4)                                            P0152810
      B2C(3,2) = - LN3C(5,2,1)                                          P0152820
      B2C(4,2) = - LN3C(6,2,1)                                          P0152830
      B3C(1,1,1) = - QGVC                                               P0152840
      B3C(2,1,1) = - QHVC                                               P0152850
      B3C(1,2,1) = - LL1C(26)                                           P0152860
      B3C(2,2,1) = - LL1C(23)                                           P0152870
      B3C(1,1,2) = - LM2C(1,3)                                          P0152880
      B3C(2,1,2) = - LM2C(1,4)                                          P0152890
      B3C(1,2,2) = - LN3C(5,2,1)                                        P0152900
      B3C(2,2,2) = - LN3C(6,2,1)                                        P0152910
C*****    WRITE RESULTS FOR THIS TEST SEGMENT                           P0152920
      WRITE (NUVI, 152) QAVC, LL1C(1), LM2C(1,1), LN3C(1,1,1), QBVC,    P0152930
     1    LL1C(2), LM2C(2,1), LN3C(2,1,1), QCVC, LL1C(3), LM2C(3,1),    P0152940
     2    LN3C(3,1,1), QDVC, LL1C(4), LM2C(4,1), LN3C(4,1,1), QEVC,     P0152950
     3    LL1C(5), LM2C(5,1), LN3C(5,1,1), QFVC, LL1C(6), QGVC,         P0152960
     4    LM2C(6,1), QHVC, LN3C(6,1,1), QIVC, LL1C(7), QJVC, LM2C(7,1), P0152970
     5    QKVC, LN3C(7,1,1), QLVC, LL1C(8), QMVC, LM2C(8,1), QNVC,      P0152980
     6    LN3C(8,1,1), QOVC, LL1C(9), QPVC, LM2C(1,2), QQVC,            P0152990
     7    LN3C(1,2,1), QRVC, LL1C(10), QSVC, LM2C(2,2), QTVC,           P0153000
     8    LN3C(2,2,1)                                                   P0153010
      WRITE (NUVI,153) QUVC, LL1C(11), QVVC, LM2C(3,2), NUMVC,          P0153020
     1    LN3C(3,2,1), AVC, LL1C(12), LM2C(4,2), LN3C(4,2,1), BVC,      P0153030
     2    LL1C(13), CVC, LM2C(5,2), DVC, LN3C(5,2,1), EVC, LL1C(14),    P0153040
     3    FVC, LM2C(6,2), GVC, LN3C(6,2,1), HVC, LL1C(15), IVC,         P0153050
     4    LM2C(7,2), JVC, LN3C(7,2,1), KVC, LL1C(16), LVC, LM2C(1,3),   P0153060
     5    MVC, LN3C(1,1,2), NVC, LL1C(17)                               P0153070
      WRITE(NUVI,8873)  OVC, LM2C(2,3), PVC,                            P0153080
     1    LL1C(18), LM2C(3,3), LN3C(2,1,2), QVC, LL1C(19)               P0153090
      WRITE (NUVI,154) RVC, LM2C(4,3), SVC, LN3C(3,1,2), TVC,           P0153100
     1    LL1C(20), UVC, LM2C(5,3), VVC, LN3C(4,1,2), MAVC, LL1C(21),   P0153110
     2    MBVC, LM2C(6,3), MCVC, LN3C(5,1,2), MDVC, LL1C(22), MEVC,     P0153120
     3    LM2C(7,3), MFVC, LN3C(6,1,2), MGVC, LL1C(23), MHVC,           P0153130
     4    LM2C(1,4), MIVC, LL1C(24), LM2C(2,4), LN3C(7,1,2)             P0153140
      WRITE (NUVI,8870) MJVC, LL1C(25), MKVC, LM2C(3,4), MLVC,          P0153150
     -                  LN3C(1,2,2), MNVC, LN3C(2,2,2), MOVC, LL1C(26), P0153160
     +                  MPVC, LM2C(4,4), MQVC, LN3C(3,2,2), MRVC,       P0153170
     =                  LN3C(4,2,2), MSVC, LL1C(27), MTVC, LM2C(5,4),   P0153180
     $                  MUVC, LN3C(5,2,2), MVVC, LL1C(28), AAVC,        P0153190
     .                  LM2C(6,4), ABVC, LN3C(6,2,2), BAVC, LM2C(7,4),  P0153200
     +                  BBVC, LN3C(7,2,2)                               P0153210
      WRITE(NUVI,8872) BCVC,A1C(5),LM2C(8,2),DDVC, A1C(6),LN3C(8,2,1),  P0153220
     1      DCVC,A1C(7),LN3C(8,2,2),CHCVC,A1C(8),LN3C(8,1,2)            P0153230
     0WRITE (NUVI,8871) QTVC, CCVC, A1C(1), A2C(1,1), A3C(1,1,1),       P0153240
     1    LL1C(12), CDVC, A1C(2), A2C(2,1), A3C(2,1,1), LM2C(1,4),      P0153250
     2    CAVC, A1C(3), A2C(1,2), A3C(1,2,1), LN3C(6,2,2), DAVC,        P0153260
     3    A1C(4), A2C(2,2), A3C(2,2,1), QGVC, ASVC, B1C(1), B2C(1,1),   P0153270
     4    B3C(1,1,1), QHVC, BSVC, B1C(2), B2C(2,1), B3C(2,1,1),         P0153280
     5    LL1C(26), CSVC, B1C(3), B2C(3,1), B3C(1,2,1), LL1C(23),       P0153290
     6    DSVC, B1C(4), B2C(4,1), B3C(2,2,1), LM2C(1,3), AAAVC, B1C(5), P0153300
     7     B2C(1,2), B3C(1,1,2), LM2C(1,4), ABAVC, B1C(6), B2C(2,2),      P0153310
     8     B3C(2,1,2), LN3C(5,2,1), ACAVC, B1C(7), B2C(3,2), B3C(1,2,2), P0153320
     9     LN3C(6,2,1), ADAVC, B1C(8), B2C(4,2), B3C(2,2,2)               P0153330
C*****     FORMAT STATEMENTS FOR THIS SEGMENT                             P0153340
152    FORMAT   (/ 6X,9H0.222E+02,9X,10H0.3333E+02/4(E15.3,E19.4/)/       P0153350
     A     6X,10H0.3956E+03,8X,11H0.41067E+04/4(E16.4,E19.5/)/            P0153360
     B     5X,14H-0.1234567E+05,4X,14H-0.1234567E+04/4(E19.7,E18.7/)/     P0153370
     C     6X,8H0.89E+01,9X,9H-0.91E+01/4(E14.2,E18.2/)/                  P0153380
     D     5X,13H-0.263512E+04,6X,10H0.4621E+02/4(E18.6,E16.4/)/          P0153390
     E     6X,7H0.1E+02,11X,7H0.2E+02/2(E13.1,E18.1/)/                    P0153400
     F     6X,7H0.3E+03,11X,7H0.4E+04/2(E13.1,E18.1/)/                    P0153410
     G     5X,8H-0.5E+02,10X,8H-0.6E+03/2(E13.1,E18.1/)/                  P0153420
     H     6X,8H0.71E+02,9X,9H-0.92E+02/2(E14.2,E18.2/)/                  P0153430
     I1H1,4X,10H-0.883E+03,9X,10H0.1414E+04/2(E15.3,E19.4/)/              P0153440
     J     6X,7H0.1E+02,11X,9H0.562E+03/2(E13.1,E20.3/)/                  P0153450
     K     6X,10H0.2002E+04,7X,10H-0.983E+03/2(E16.4,E17.3/)/             P0153460
     L     6X,9H0.461E+03,8X,10H-0.165E+03/2(E15.3,E18.3/)/               P0153470
     M     5X,9H-0.21E+02,10X,9H0.122E+03/2(E14.2,E19.3/)/                P0153480
     N     6X,7H0.1E-02,11X,7H0.2E-02/2(E13.1,E18.1/)/                    P0153490
     O     6X,9H0.562E+00,9X,9H0.562E+00/2(E15.3,E18.3/)/                 P0153500
     P     5X,8H-0.3E+00,10X,14H-0.3333333E+00/2(E13.1,E24.7/)/           P0153510
     Q     6X,7H0.4E+00,10X,10H-0.445E+00/2(E13.1,E20.3/)/                P0153520
     R     5X,9H-0.95E+00,10X,8H0.95E+00/2(E14.2,E18.2/)/                 P0153530
     S     6X,12H0.164239E-01,6X,8H0.36E+00/2(E18.6,E14.2/),1H )          P0153540
153    FORMAT   (  6X,8H0.21E+00,9X,11H-0.3963E+00/2(E14.2,E20.4/)/       P0153550
     A     6X,10H0.3398E+00,8X,10H0.3398E+00/2(E16.4,E18.4/)/             P0153560
     B     5X,8H-0.6E+00,11X,7H0.6E+00/2(E13.1,E18.1/)/                   P0153570
     C1H1,5X,7H0.0E+00,11X,7H0.1E+01/E13.1,E18.1//                        P0153580
     D     6X,13H0.4562311E+07,5X,12H0.789453E+06/E19.7,E17.6//           P0153590
     E     6X,9H0.449E+06,9X,8H0.25E+04/E15.3,E17.2//                     P0153600
     F     6X,11H0.22223E+07,7X,10H0.3332E+05/E17.5,E17.4//               P0153610
     G     6X,7H0.3E+01,11X,7H0.3E+01/2(E13.1,E18.1/)/                    P0153620
     H     6X,13H0.9876543E+05,5X,13H0.8765432E+04/2(E19.7,E18.7/)/       P0153630
     I     6X,10H0.4444E+04,8X,11H0.55555E-02/2(E16.4,E19.5/)/            P0153640
     J     6X,7H0.6E-04,11X,8H0.77E+07/2(E13.1,E19.2/)/                   P0153650
     K     6X,9H0.142E+03,9X,10H0.2667E+02/2(E15.3,E19.4/)/               P0153660
     L     5X,12H-0.36923E+06,6X,10H-0.234E+03/2(E17.5,E16.3/)/           P0153670
     M     6X,8H0.21E+03,9X,9H-0.21E+03/2(E14.2,E18.2/)/                  P0153680
     N     5X,11H-0.5959E+03,8X,10H0.4967E+03/2(E16.4,E18.4/)/            P0153690
     O     6X,7H0.1E+01,11X,7H0.1E+01/2(E13.1,E18.1/)/                    P0153700
     P     5X,8H-0.2E+01,10X,8H-0.2E+01/2(E13.1,E18.1/)/                  P0153710
     Q     6X,9H0.492E+01,8X,11H-0.6527E+04/2(E15.3,E19.4/),              P0153720
     R1H1,4X,11H-0.7371E+06,8X,9H0.998E-01/2(E16.4,E17.3/)/               P0153730
     S     6X,12H0.477447E+07,5X,12H-0.93624E+00/2(E18.6,E17.5/),1H )     P0153740
8873   FORMAT(5X,13H-0.846200E-02,6X,11H0.13330E+03/2(E18.6,E17.5/)/      P0153750
     U          6X,12H0.770000E+09,6X,11H0.81625E+08/2(E18.6,E17.5/)/     P0153760
     V        6X,12H0.133400E+05,6X,11H0.37900E+06/2(E18.6,E17.5/)/       P0153770
     W        6X,12H0.300000E+06,6X,11H0.30000E+06/2(E18.6,E17.5/),1H )   P0153780
154    FORMAT (  6X,9H0.299E-01,9X,9H0.299E+02/2(E15.3,E18.3/)/           P0153790
     A     6X,10H0.1419E+06,8X,10H0.1419E+02/2(E16.4,E18.4/)/             P0153800
     B     6X,8H0.76E-01,10X,9H0.987E+03/2(E14.2,E19.3/)/                 P0153810
     C     6X,8H0.31E+02,10X,10H0.4659E+05/2(E14.2,E20.4/)/               P0153820
     D     5X,10H-0.728E+05,8X,12H-0.93296E+08/2(E15.3,E20.5/)/           P0153830
     E     6X,7H0.6E+07,10X,8H-0.6E+07/2(E13.1,E18.1/)/                   P0153840
     F     5X,11H-0.7914E+07,8X,8H0.16E+07/2(E16.4,E16.2/)/               P0153850
     G     6X,7H0.1E+02,11X,7H0.1E+02/2(E13.1,E18.1/),                    P0153860
     H1H1,4X,8H-0.2E-01,10X,8H-0.2E-01/2(E13.1,E18.1/)/                   P0153870
     I     6X,7H0.3E-02,10X,8H-0.3E+04/2(E13.1,E18.1/)/                   P0153880
     J     5X,8H-0.4E+05,11X,7H0.4E-03/2(E13.1,E18.1/)/                   P0153890
     K     6X,7H0.5E+06,10X,8H-0.5E-04/2(E13.1,E18.1/)/                   P0153900
     L     5X,8H-0.6E-05,11X,7H0.6E+07/2(E13.1,E18.1/)/                   P0153910
     M     6X,11H0.39393E+01,7X,8H0.62E+04/2(E17.5,E15.2/)/               P0153920
     N     6X,7H0.9E+00,11X,12H0.765765E+03/2(E13.1,E23.6/),1H )          P0153930
8870   FORMAT (  6X,9H0.352E+09,9X,8H0.35E+03/2(E15.3,E17.2/)/            P0153940
     (          6X,12H0.147626E+00,6X,9H0.891E-14/2(E18.6,E15.3/)/        P0153950
     *          6X,7H0.9E-07,11X,10H0.9999E+08/2(E13.1,E21.4/)/           P0153960
     )          6X,8H0.13E-04,10X,8H0.13E-04/2(E14.2,E18.2/)/             P0153970
     /          6X,8H0.77E+00,10X,8H0.77E+00/2(E14.2,E18.2/)/             P0153980
     /          6X,9H0.878E+01,8X,10H-0.878E+01/2(E15.3,E18.3/)/        P0153990
     A          5X,11H-0.9797E+02,8X,10H0.9797E+02/2(E16.4,E18.4/),     P0154000
     .    1H1,4X,12H-0.10101E+15,6X,12H-0.10101E+15/2(E17.5,E18.5/)/    P0154010
     ,          6X,8H0.68E+12,10X,12H0.357628E+00/2(E14.2,E22.6/)/      P0154020
     -          6X,9H0.798E-03,9X,11H0.76444E+00/2(E15.3,E20.5/)/       P0154030
     +          5X,11H-0.3247E+20,7X,11H-0.2594E+05/2(E16.4,E18.4/)/    P0154040
     1          5X,12H-0.43599E-19,6X,9H-0.12E-04/2(E17.5,E15.2/)/      P0154050
     2          5X,8H-0.6E-09,10X,8H-0.6E+09/2(E13.1,E18.1/)/           P0154060
     3          5X,11H-0.9119E+06,8X,10H0.9119E-06/2(E16.4,E18.4/)/     P0154070
     4          6X,11H0.39426E+02,6X,12H-0.39426E-02/2(E17.5,E18.5/)/   P0154080
     5          6X,8H0.45E-12,10X,8H0.45E+12/2(E14.2,E18.2/),1H )       P0154090
8872  FORMAT(                                                           P0154100
     6          6X,10H0.4793E+06,8X,10H0.3479E+06/3(E16.4,E18.4/)/      P0154110
     7          6X,10H0.3682E+01,8X,10H0.8236E+02/3(E16.4,E18.4/)/      P0154120
     8         5X,11H-0.2571E+09,8X,10H0.1752E+09/3(E16.4,E18.4/)/      P0154130
     9          6X,10H0.1460E+00,7X,11H-0.1064E+05/3(E16.4,E18.4/))     P0154140
8871  FORMAT(1H1,5X,13H0.1642390E-01,5X,13H0.3600000E+00/5(E19.7,E18.7/)P0154150
     1        /6X,13H0.4562311E+07,5X,13H0.7894530E+06/5(E19.7,E18.7/)/ P0154160
     2         5X,14H-0.6000000E-05,5X,13H0.6000000E+07/5(E19.7,E18.7/)/ P0154170
     3         5X,14H-0.9119000E+06,5X,13H0.9119000E-06/5(E19.7,E18.7/), P0154180
     4 39H1 EACH GROUP SHOULO BE IOENTICAL EXCEPT/                      P0154190
     5 38H  FOR THE SIGN  OF THE FIRST TWO LINES//                      P0154200
     6          6X,13H0.3000000E+03,5X,13H0.4000000E+04/5(E19.7,E18.7/)/ P0154210
     7          5X,14H-0.5000000E+02,4X,14H-0.6000000E+03/5(E19.7,E18.7/)/ P0154220
     8          6X,13H0.7700000E+00,5X,13H0.7700000E+00/5(E19.7,E18.7/)/ P0154230
     9          6X, 13H0.5000000E+06,4X,14H-0.5000000E-04/5(E19.7,E18.7/)/ P0154240
     A          6X,13H0.4920000E+01,4X,14H-0.6527000E+04/5(E19.7,E18.7/)/ P0154250
     B          5X,14H-0.6000000E-05,5X,13H0.6000000E+07/5(E19.7,E18.7/)/ P0154260
     C          6X,13H0.4444000E+04,5X,13H0.5555500E-02/5(E19.7,E18.7/)/ P0154270
     D    1H1,4X,14H-0.3692300E+06,4X,14H-0.2340000E+03/5(E19.7,E18.7/)) P0154280
C*****    END OF TEST SEGMENT 015                                       P0154290
C*****  WHEN EXECUTING ONLY SEGMENT 015, THE STOP AND END CARDS         P0154300
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C= IN COLUMNS            P0154310
C*****  1  AND  2  REMOVEO.                                             P0154320
C=    STOP                                                              P0154330
C=    END                                                               P0154340
      STOP                                                              P015C1
      END                                                               P015C2
C***********************************************************************P0160010
C*****                                                                  P0160020
C*****                        LASGN - (016)                             P0160030
C*****                                                                  P0160040
C***********************************************************************P0160050
C*****    GENERAL PURPOSE                                        ASA REFP0160060
C*****    TO TEST LOGICAL ASSIGNMENTS                            7.1.1.2P0160070
C*****    CONSTANTS USED IN THIS SEGMENT                                P0160080
C*****  S P E C I F I C A T I O N S   SEGMENT 016                       P0160090
C*****                                                                  P0160100
C*****  WHEN EXECUTING ONLY SEGMENT 016, THE SPECIFICATION STATEMENTS   P0010390
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0010395
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0010400
C*****                                                                  P0010405
C=    DIMENSION IAC1I(5)                                                P0010410
C=    LOGICAL MCAVB,MCBVB,MCCVB,MCDVB,MCEVB,MCFVB,MCGVB,MCHVB,MCIVB,    P0010415
C=   1   MCJVB, MCKVB, MCLVB, MCMVB, MCNVB ,MCA1B(7)                    P0010420
C=    LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB,CVB                    P0010425
C*****                                                                  P0010430
      DIMENSION IAC1I(5)                                                P016A1
      LOGICAL MCAVB,MCBVB,MCCVB,MCDVB,MCEVB,MCFVB,MCGVB,MCHVB,MCIVB,    P016A2
     1   MCJVB, MCKVB, MCLVB, MCMVB, MCNVB ,MCA1B(7)                    P016A3
      LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB,CVB                    P016A4
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0160110
C*****  WHEN EXECUTING ONLY SEGMENT 016, THE FOLLOWING STATEMENT        P0070290
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0070295
C*****                                                                  P0070300
C=    NUVI = 6                                                          P0070305
      NUVI = 6                                                          P016B1
C*****                                                                  P0160120
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      IAC1I(1) = 25                                                     P0160130
      IAC1I(2) = 10                                                     P0160140
      IAC1I(3) = 15                                                     P0160150
      IAC1I(4) = 25                                                     P0160160
C*****     WRITE HEADER FOR THIS SEGMENT                                P0160170
      WRITE (NUVI,160)                                                  P0160180
160   FORMAT (1H1,28H LASGN - (016) ASSIGNMENT OF/ 16X,17HLOGIGAL VARIABP0160190
     ALES/21H  ASA REFS. - 7.1.1.2//9H  RESULTS)                        P0160200
C*****     TEST THE ASSIGNMENT OF RELATIONAL EXPRESSIONS         6.2    P0160210
C*****     TO LOGICAL VARIABLES AND ARRAYS                              P0160220
      MCAVB = IAC1I(2) .LT. IAC1I(3)                                    P0160230
      MCBVB = IAC1I(3) .LT. IAC1I(2)                                    P0160240
      MCCVB = IAC1I(1) .EQ. IAC1I(4)                                    P0160250
      MCDVB = IAC1I(2) .EQ. IAC1I(1)                                    P0160260
      MCEVB = IAC1I(1) .LE. IAC1I(4)                                    P0160270
      MCFVB = IAC1I(2) .LE. IAC1I(1)                                    P0160280
      MCGVB = IAC1I(1) .LE. IAC1I(2)                                    P0160290
      MCHVB = IAC1I(1) .EQ. 25                                          P0160300
      MCIVB = IAC1I(2) .EQ. IAC1I(4)                                    P0160310
      MCA1B(1) = IAC1I(2) .NE. IAC1I(3)                                 P0160320
      MCA1B(2) = IAC1I(1) .NE. IAC1I(4)                                 P0160330
      MCA1B(3) = IAC1I(1) .GT. IAC1I(2)                                 P0160340
      MCA1B(4) = IAC1I(2) .GT. IAC1I(1)                                 P0160350
      MCA1B(5) = IAC1I(1) .GE. IAC1I(2)                                 P0160360
      A1B(1) = IAC1I(1) .GE. IAC1I(4)                                   P0160370
      A1B(2) = IAC1I(2) .GE. IAC1I(1)                                   P0160380
C*****     TEST THE ASSIGNMENT OF A MIXTURE OF RELATIONAL AND           P0160390
C*****     LOGICAL EXPRESSIONS TO LOGICAL VARIABLES AND ARRAYS   6.3    P0160400
      A2B(1,1) = .TRUE.                                                 P0160410
      A2B(1,2) = .FALSE.                                                P0160420
      AVB = A2B(1,2) .AND. .NOT. A2B(1,1)                               P0160430
      BVB = A2B(1,2) .OR. .NOT. A2B(1,1)                                P0160440
      CVB = IAC1I(2).LT.IAC1I(3).AND.(A2B(1,1).OR..NOT.A2B(1,2)).OR.A2B(P0160450
     A1,1).AND..NOT.A2B(1,2).AND.IAC1I(1).GT.IAC1I(4)                   P0160460
      A2B(2,1) = .NOT. (CVB.AND.MCIVB).AND. IAC1I(2) .NE. IAC1I(3) .AND.P0160470
     1            IAC1I(2) .LT. IAC1I(3) .AND. IAC1I(1) .EQ. IAC1I(4)   P0160480
      A2B(2,2) = A2B(1,2) .AND. IAC1I(1) .EQ. IAC1I(4)                  P0160490
      A3B(1,1,1) = IAC1I(2) .LT. IAC1I(3) .AND. A2B(1,2)                P0160500
      A3B(1,1,2) = IAC1I(2) .GT. IAC1I(3) .AND. A2B(1,1)                P0160510
      A3B(1,2,1) = .NOT. MCA1B(5) .AND.                                 P0160520
     1              A2B(1,1) .OR. IAC1I(1) .EQ. IAC1I(4)                P0160530
      A3B(1,2,2) = .NOT. (A2B(1,2) .AND. IAC1I(1) .EQ. IAC1I(4)).OR.    P0160540
     1              A2B(1,1) .OR. A2B(1,2)                              P0160550
      A3B(2,1,1) = A2B(1,2) .OR. IAC1I(1) .EQ. IAC1I(4)                 P0160560
      A3B(2,2,1) = .NOT.MCCVB.AND.MCHVB .OR. IAC1I(1) .NE. IAC1I(4) .OR.P0160570
     1              IAC1I(1) .LT. IAC1I(4) .OR. A2B(1,2)                P0160580
      A3B(2,1,2) = .NOT. A3B(1,1,2) .AND.                               P0160590
     1            ( A2B(1,1) .AND. .NOT. A2B(1,2) )                     P0160600
      A3B(2,2,2) = IAC1I(1) .LT. IAC1I(4) .OR. .NOT. A2B(1,2)           P0160610
      MCJVB=IAC1I(2).GT.IAC1I(3).AND.(A2B(1,1).OR..NOT.A2B(1,2)).OR.A2B(P0160620
     A1,2).AND..NOT.A2B(1,2).AND.IAC1I(1).GT.IAC1I(4)                   P0160630
      MCKVB = IAC1I(2).LT.IAC1I(3).AND.A2B(1,1).OR.A2B(1,2)             P0160640
      MCLVB = (IAC1I(2) .LT. IAC1I(3) .AND. A2B(1,2)) .OR. A2B(1,1)     P0160650
      MCMVB = A2B(1,2) .OR. IAC1I(2) .LT. IAC1I(3) .AND. A2B(1,1)       P0160660
      MCNVB = A2B(1,2) .OR. (IAC1I(2) .LT. IAC1I(3) .AND. A2B(1,1))     P0160670
C*****     WRITE VARIABLES THAT ARE TRUE                                P0160680
      WRITE (NUVI,161) MCAVB, MCCVB, MCEVB, MCFVB, MCHVB, MCA1B(1),     P0160690
     A                 MCA1B(3), MCA1B(5), A1B(1), A2B(1,1), A2B(2,1),  P0160700
     B                 A3B(1,2,1), A3B(1,2,2), A3B(2,1,1), A3B(2,1,2),  P0160710
     C                 A3B(2,2,2), CVB, MCKVB, MCLVB, MCMVB, MCNVB      P0160720
161   FORMAT (//32H  ALL ANSWERS BELOW MUST BE TRUE//21(L16/)///)       P0160730
C*****     WRITE VARIABLES THAT ARE FALSE                               P0160740
      WRITE (NUVI,162) MCBVB, MCDVB, MCGVB, MCIVB, MCA1B(2), MCA1B(4),  P0160750
     A                 A1B(2), A2B(1,2), A2B(2,2),A3B(1,1,1),A3B(1,1,2),P0160760
     B                 A3B(2,2,1), AVB, BVB, MCJVB                      P0160770
162   FORMAT (33H  ALL ANSWERS BELOW MUST BE FALSE//15(L16/))           P0160780
C*****     END OF SEGMENT 016                                           P0160790
C*****                                                                  P0160800
```

```
C*****  WHEN EXECUTING ONLY SEGMENT 016, THE  STOP  AND  END            P0160810
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0160820
C*****  IN COL  1  AND  2  REMOVED.                                     P0160830
C*****                                                                  P0160840
C=    STOP                                                              P0160850
C=    END                                                               P0160860
      STOP                                                              P016C1
      END                                                               P016C2
C***********************************************************************P0170010
C*****                                                                  P0170020
C*****                       INTRL - (017)                              P0170030
C*****                                                                  P0170040
C***********************************************************************P0170050
C*****  GENERAL PURPOSE                                         ASA REF P0170060
C*****     TO TEST ARITHMETIC ASSIGNMENT STATEMENTS WHERE     TABLE 1,PG13P0170070
C*****     REAL CONSTANTS AND VARIABLES, INTEGER VARIABLES   (LINES 2,3, P0170080
C*****     AND ARRAY ELEMENTS, AND DOUBLE PRECISION CON-            5,6, P0170090
C*****     STANTS AND VARIABLES ARE ASSIGNED TO EACH OTHER          9,10)P0170100
C*****                                                                  P0170110
C*****  S P E C I F I C A T I O N S   SEGMENT 017                       P0170120
C*****                                                                  P0010440
C*****  WHEN EXECUTING ONLY SEGMENT 017, THE SPECIFICATION STATEMENTS   P0010445
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=  IN                  P0010450
C*****  COL  1  AND  2  REMOVED                                         P0010455
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3),IAC1I(5),IAC2I(2,7)          P0010460
C=    INTEGER MCA3I(2,3,3)                                              P0010465
C=    DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2),DPAVD             P0010470
C*****                                                                  P0010475
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3),IAC1I(5),IAC2I(2,7)          P017A1
      INTEGER MCA3I(2,3,3)                                              P017A2
      DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2),DPAVD             P017A3
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0170130
C*****                                                                  P0070310
C*****  WHEN EXECUTING ONLY SEGMENT 017, THE STATEMENT  NUVI = 6        P0070315
C*****  MUST HAVE THE  C=  IN COL 1  AND  2  REMOVED.                   P0070320
C*****                                                                  P0070325
C=    NUVI = 6                                                          P0070330
C*****                                                                  P0070335
      NUVI = 6                                                          P017B1
      WRITE (NUVI,170)                                                  P0170140
170   FORMAT(1H1,1X,39HINTRL - (017) ASSIGN INTEGER, REAL, AND/         P0170150
     1 16X,23HDOUBLE PRECISION VALUES/2X,29HASA REFS. - 7.1.1.1.   5.1.1.P0170160
     22/2X,7HRESULTS/)                                                  P0170170
C*****     TEST ASSIGNMENT OF INTEGER VARIABLES              TABLE 1/LN 5,9P0170180
      JACVI = 1                                                         P0170190
      IAC1I(3) = +111                                                   P0170200
      IAC2I(2,3) = -1111                                                P0170210
      MCA3I(2,1,2) = -11111                                             P0170220
      ACVS = IAC1I(3)                                                   P0170230
      A1S(2) = IAC2I(2,3)                                               P0170240
      A2S(2,1) = MCA3I(2,1,2)                                           P0170250
      A3S(2,1,2) = JACVI                                                P0170260
      DPAVD = MCA3I(2,1,2)                                              P0170270
      AC1D(7) = JACVI                                                   P0170280
      BC2D(7,4) = IAC1I(3)                                              P0170290
      CC3D(5,1,2) = IAC2I(2,3)                                          P0170300
      WRITE (NUVI,171)                                                  P0170310
171   FORMAT (/2X,24HASSIGN INTEGER VARIABLES//3X,            21H1 - TO P0170320
     1REAL VARIABLES)                                                   P0170330
      WRITE (NUVI,172)ACVS,A1S(2),A2S(2,1),A3S(2,1,2),DPAVD,AC1D(7),BC2DP0170340
     1(7,4),CC3D(5,1,2)                                                 P0170350
172   FORMAT(/8X,8H 111.0 */F14.1//                                     P0170360
     1           7X,9H-1111.0 */F14.1//                                 P0170370
     2           4X,12H  -11111.0 */F14.1//                             P0170380
     3           11X,5H1.0 */F14.1//3X,33H2 - TO DOUBLE PRECISION VARIABLESP0170390
     4           //4X,16H  -0.11111D 05 */D18.5//                       P0170400
     5           11X,9H0.1D 01 */D18.1//                                P0170410
     6           9X,11H0.111D 03 */D18.3//                              P0170420
     7        7X,13H-0.1111D 04 */D18.4/)                               P0170430
C*****    TEST ASSIGNMENT OF INTEGER CONSTANTS                          P0170440
      ACVS = -2222                                                      P0170450
      A1S(2) = +222                                                     P0170460
      A2S(2,1) = -22222                                                 P0170470
      A3S(2,1,2) = 2                                                    P0170480
      DPAVD = 2                                                         P0170490
      AC1D(7) = -22222                                                  P0170500
      BC2D(7,4) = -2222                                                 P0170510
      CC3D(5,1,2) = +222                                                P0170520
      WRITE (NUVI,173)                                                  P0170530
173   FORMAT (/2X,24HASSIGN INTEGER CONSTANTS//3X,           21H1 - TO RP0170540
     1EAL VARIABLES)                                                    P0170550
      WRITE (NUVI,174)ACVS,A1S(2),A2S(2,1),A3S(2,1,2),DPAVD,AC1D(7),BC2DP0170560
     1(7,4),CC3D(5,1,2)                                                 P0170570
174   FORMAT(/6X,9H-2222.0 */F13.1//                                    P0170580
     1        8X,7H222.0 */F13.1//                                      P0170590
     2        3X,12H  -22222.0 */F13.1//                                P0170600
     3       10X,5H2.0 */F13.1/  35H1 2 - TO DOUBLE PRECISION VARIABLES/P0170610
     4       /12X,9H0.2D 01 */D19.1//                                   P0170620
     5        5X,16H  -0.22222D 05 */D19.5//                            P0170630
     6        8X,13H-0.2222D 04 */D19.4//                               P0170640
     7       10X,11H0.222D 03 */D19.3/)                                 P0170650
C*****    TEST ASSIGNMENT OF BASIC REAL CONSTANTS        TABLE 1/LN 2,10P0170660
      JACVI = 3.3                                                       P0170670
      IAC1I(3) = +333.3E-2                                              P0170680
      IAC2I(2,3) = .3333E+1                                             P0170690
      MCA3I(2,1,2) = -.0033333E3                                        P0170700
      DPAVD = +3.3333                                                   P0170710
      AC1D(7) = .3333333E1                                              P0170720
      BC2D(7,4) = -333.3333E-2                                          P0170730
      CC3D(5,1,2) = -.0333333E+2                                        P0170740
      WRITE (NUVI,7173)                                                 P0170750
7173  FORMAT (/2X,27HASSIGN BASIC REAL CONSTANTS//3X,            24H1 - P0170760
     1TO INTEGER VARIABLES)                                             P0170770
      WRITE(NUVI,7172)JACVI,IAC1I(3),IAC2I(2,3),MCA3I(2,1,2),DPAVD,AC1D(P0170780
     17),BC2D(7,4),CC3D(5,1,2)                                          P0170790
7172  FORMAT(/9X,3H3 */3(I10/)/8X,4H-3 */I10//3X,33H2 - TO DOUBLE PRECISP0170800
     1ION VARIABLES//                                                   P0170810
     2        8X,13H0.33333D 01 */D19.5//                               P0170820
     3        6X,15H0.3333333D 01 */D19.7//                             P0170830
     4        5X,16H-0.3333333D 01 */D19.7//                            P0170840
     5        6X,15H-0.333333D 01 */D19.6/)                             P0170850
C*****    TEST ASSIGNMENT OF REAL VARIABLES                             P0170860
      ACVS = +.0044444E4                                                P0170870
      A1S(2) = -4444.E-2                                                P0170880
      A2S(2,1) = -44.4                                                  P0170890
      A3S(2,1,2) = 4.4444E+1                                            P0170900
      JACVI = A2S(2,1)                                                  P0170910
      IAC1I(3) = A1S(2)                                                 P0170920
      IAC2I(2,3) = A3S(2,1,2)                                           P0170930
      MCA3I(2,1,2) = ACVS                                               P0170940
      DPAVD = A2S(2,1)                                                  P0170950
      AC1D(7) = A1S(2)                                                  P0170960
      BC2D(7,4) = A3S(2,1,2)                                            P0170970
      CC3D(5,1,2) = ACVS                                                P0170980
      WRITE (NUVI,175)                                                  P0170990
175   FORMAT (/23H  ASSIGN REAL VARIABLES//           27H   1 - TO INTEGP0171000
     1ER VARIABLES)                                                     P0171010
      WRITE (NUVI,176)JACVI,IAC1I(3),IAC2I(2,3),MCA3I(2,1,2),DPAVD,AC1D(P0171020
     17),BC2D(7,4),CC3D(5,1,2)                                          P0171030
176   FORMAT(   /7X,5H-44 */2(I10/)/8X,4H44 */2(I10/), 35H1 2 - TO DOUBLP0171040
     1E PRECISION VARIABLES//                                           P0171050
     2        6X,12H-0.444D 02 */D16.3//                                P0171060
     3        5X,13H-0.4444D 02 */D16.4//                               P0171070
     4        5X,13H0.44444D 02 */D16.5//                               P0171080
     5        5X,13H0.44444D 02 */D16.5/)                               P0171090
C*****    TEST ASSIGNMENT OF D.P. VARIABLES               TABLE 1/LN 3,6P0171100
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      DPAVD=5555.55                                                     P0171110
      AC1D(7) = +55555555555555.D-13                                    P0171120
      BC2D(7,4) = -.00000555555555D6                                    P0171130
      CC3D(5,1,2) = -.05555555555555D+2                                 P0171140
      JACVI = DPAVD                                                     P0171150
      IAC1I(3) = AC1D(7)                                                P0171160
      IAC2I(2,3) = BC2D(7,4)                                            P0171170
      MCA3I(2,1,2) = CC3D(5,1,2)                                        P0171180
      ACVS = CC3D(5,1,2)                                                P0171190
      A1S(2) = BC2D(7,4)                                                P0171200
      A2S(2,1) = AC1D(7)                                                P0171210
      A3S(2,1,2) = DPAVD                                                P0171220
      WRITE (NUVI,177)                                                  P0171230
177   FORMAT (/2X,33HASSIGN DOUBLE PRECISION VARIABLES/                 P0171240
     1/3X,24H1 - TO INTEGER VARIABLES)                                  P0171250
      WRITE (NUVI,178)JACVI,IAC1I(3),IAC2I(2,3),MCA3I(2,1,2),ACVS,A1S(2)P0171260
     1,A2S(2,1),A3S(2,1,2)                                              P0171270
178   FORMAT(/3X,9H   5555 */I10//9X,3H5 */I10//8X,4H-5 */2(I10/)/3X,21HP0171280
     12 - TO REAL VARIABLES//                                           P0171290
     2        3X,16H-0.5555556E 01 */E17.7//                            P0171300
     3        3X,16H-0.5555556E 01 */E17.7//                            P0171310
     4        3X,16H 0.5555556E 01 */E17.7//                            P0171320
     5        3X,16H  0.555555E 04 */E17.6/)                            P0171330
C*****    TEST ASSIGNMENT OF DOUBLE PRECISION CONSTANTS                 P0171340
      JACVI = 66666.D-4                                                 P0171350
      IAC1I(3) = -.00000066666666D7                                     P0171360
      IAC2I(2,3) = -.06666666666666D+2                                  P0171370
      MCA3I(2,1,2)=66666.666666666D-1                                   P0171380
      ACVS = 66666666666666.D0                                          P0171390
      A1S(2) = +66666.D-4                                               P0171400
      A2S(2,1) = -.00000006666666D8                                     P0171410
      A3S(2,1,2) = -.06666666666666D+2                                  P0171420
      WRITE (NUVI,179)                                                  P0171430
179   FORMAT (   35H1 ASSIGN DOUBLE PRECISION CONSTANTS/                P0171440
     1/3X,24H1 - TO INTEGER VARIABLES)                                  P0171450
      WRITE(NUVI,7170)JACVI,IAC1I(3),IAC2I(2,3),MCA3I(2,1,2),ACVS,A1S(2)P0171460
     1,A2S(2,1),A3S(2,1,2)                                              P0171470
7170  FORMAT(  / 9X,3H6 */I10//8X,4H-6 */2(I10/)/3X,9H   6666 */I10//   P0171480
     1 3X,21H2 - TO REAL VARIABLES//                                    P0171490
     2        3X,16H 0.6666667E 14 */E17.7//                            P0171500
     3        3X,16H   0.66666E 01 */E17.5//                            P0171510
     4        3X,16H-0.6666666E 01 */E17.7//                            P0171520
     5        3X,16H-0.6666667E 01 */E17.7/)                            P0171530
      WRITE (NUVI,7171)                                                 P0171540
7171  FORMAT(//34H ALL TEST OUTPUT SHOULD BE CHECKED/                   P0171550
     1         34H AGAINST THE ASTERISKED (*) FIGURE/                   P0171560
     2         18H WHICH PRECEDES IT)                                   P0171570
C*****    END OF TEST SEGMENT 017                                       P0171580
C*****                                                                  P0171590
C*****  WHEN EXECUTING ONLY SEGMENT 017, THE  STOP  AND  END            P0171600
C*****  CARDS WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                P0171610
C*****  IN COL 1 AND 2 REMOVED.                                         P0171620
C*****                                                                  P0171630
C=    STOP                                                              P0171640
C=    END                                                               P0171650
      STOP                                                              P017C1
      END                                                               P017C2
C***********************************************************************P0200010
C*****                                                                  P0200020
C*****                       UGOTO - (020)                              P0200030
C*****                                                                  P0200040
C***********************************************************************P0200050
C*****  GENERAL PURPOSE                                         ASA REF P0200060
C*****    TO TEST UNCONDITIONAL GO TO STATEMENTS               7.1.2.1.1P0200070
C*****  RESTRICTION OBSERVED                                            P0200080
C*****    GO TO STATEMENTS CAUSE BRANCHES ONLY TO              7.1.2 /54P0200090
C*****    EXECUTABLE STATEMENTS                                         P0200100
C*****  GENERAL COMMENTS                                                P0200110
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C*****    GO TO STATEMENTS ALSO TESTED IN SEGMENT 193                   P0200120
C*****                                                                  P0200130
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0200140
C*****                                                                  P0070340
C*****  WHEN EXECUTING ONLY SEGMENT 020, THE STATEMENT  NUVI = 6        P0070345
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070350
C*****                                                                  P0070355
C=    NUVI = 6                                                          P0070360
C*****                                                                  P0070365
      NUVI = 6                                                          P020B1
      WRITE (NUVI,200)                                                  P0200150
200   FORMAT (1H1,1X,33HUGOTO - (020) UNCONDITIONAL GO TO/16X,          P0200160
     19HSTATEMENT//2X,                                                  P0200170
     2 21HASA REFS. - 7.1.2.1.1//2X,7HRESULTS)                          P0200180
C*****    HEADER FOR SEGMENT 020 WRITTEN                                P0200190
C*****    TEST BRANCH FORWARD                                           P0200200
      GO TO 201                                                         P0200210
203   MRRVI = 3                                                         P0200220
      WRITE (NUVI,7200) MRRVI                                           P0200230
7200  FORMAT (/4X,I1)                                                   P0200240
      GO TO 204                                                         P0200250
207   MRRVI = 7                                                         P0200260
      WRITE (NUVI,7200) MRRVI                                           P0200270
      GO TO 208                                                         P0200280
202   MRRVI = 2                                                         P0200290
      WRITE (NUVI,7200) MRRVI                                           P0200300
C*****    TEST BRANCH BACKWARD                                          P0200310
      GO TO 203                                                         P0200320
201   MRRVI = 1                                                         P0200330
      WRITE (NUVI,7200) MRRVI                                           P0200340
      GO TO 202                                                         P0200350
208   MRRVI = 8                                                         P0200360
      WRITE (NUVI,7200) MRRVI                                           P0200370
      GO TO 209                                                         P0200380
206   MRRVI = 6                                                         P0200390
      WRITE (NUVI,7200) MRRVI                                           P0200400
      GO TO 207                                                         P0200410
204   MRRVI = 4                                                         P0200420
      WRITE (NUVI,7200) MRRVI                                           P0200430
C*****    TEST BRANCH TO STATEMENT IMMEDIATELY AFTER                    P0200440
C*****    UNCONDITIONAL GO TO                                           P0200450
      GO TO 205                                                         P0200460
205   MRRVI = 5                                                         P0200470
      WRITE (NUVI,7200) MRRVI                                           P0200480
      GO TO 206                                                         P0200490
209   WRITE (NUVI,7201)                                                 P0200500
7201  FORMAT (//2X,35HTHIS TEST IS SUCCESSFUL ONLY IF THE/              P0200510
     12X,37HNUMBERS LISTED ABOVE ARE SEQUENTIALLY/                      P0200520
     22X,20HIN ORDER FROM 1 TO 8)                                       P0200530
C*****    END OF TEST SEGMENT 020                                       P0200540
C*****                                                                  P0200550
C*****  WHEN EXECUTING ONLY SEGMENT 020, THE  STOP  AND  END            P0200560
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0200570
C*****  IN COL  1  AND  2  REMOVED.                                     P0200580
C=    STOP                                                              P0200590
C=    END                                                               P0200600
      STOP                                                              P020C1
      END                                                               P020C2
C***********************************************************************P0210010
C*****                                                                  P0210020
C*****                      AGOTO - (021)                               P0210030
C*****                                                                  P0210040
C***********************************************************************P0210050
C*****  GENERAL PURPOSE                                         ASA REF P0210060
C*****    TO TEST GO TO ASSIGNMENT STATEMENTS                   7.1.1.3  P0210070
C*****    AND ASSIGNED GO TO STATEMENTS                         7.1.2.1.2P0210080
C*****  RESTRICTIONS OBSERVED                                           P0210090
C*****    INTEGER VARIABLE USED IN ASSIGN STATEMENTS        7.1.1.3  /06P0210100
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C*****    IS NEVER REFERENCED ELSEWHERE IN THIS SEGMENT     10.2.3   /12P0210110
C*****    ASSIGNED GO TO STATEMENTS CAUSE BRANCHES ONLY    7.1.1.3  /03P0210120
C*****    TO EXECUTABLE STATEMENTS                          7.1.2    /54P0210130
C*****    INTEGER VARIABLE ALWAYS CONTAINS STATEMENT        7.1.2.1.2/20P0210140
C*****    LABEL FROM THE ASSIGNED GO TO LIST                            P0210150
C*****  GENERAL COMMENTS                                                P0210160
C*****    IGVI AND KGVI ARE IMPLICITLY DEFINED              5.3      /07P0210170
C*****    GTVI IS EXPLICITLY DEFINED                        7.2.1.6  /55P0210180
C*****    ASSIGN AND ASSIGNED GO TO ALSO TESTED IN                      P0210190
C*****    SEGMENT 190                                                   P0210200
C*****                                                                  P0210210
C*****  S P E C I F I C A T I O N S   SEGMENT 021                       P0210220
C*****                                                                  P0010480
C*****  WHEN EXECUTING ONLY SEGMENT 021, THE SPECIFICATION STATEMENTS   P0010485
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COL               P0010490
C*****  1  AND  2  REMOVED                                              P0010495
C=    INTEGER GTVI                                                      P0010500
C*****                                                                  P0010505
      INTEGER GTVI                                                      P021A1
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0210230
C*****                                                                  P0070370
C*****  WHEN EXECUTING ONLY SEGMENT 021, THE STATEMENT  NUVI = 6        P0070375
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070380
C*****                                                                  P0070385
C=    NUVI = 6                                                          P0070390
C*****                                                                  P0070395
      NUVI = 6                                                          P021B1
      WRITE (NUVI,210)                                                  P0210240
210   FORMAT (1H1,1X,33HAGOTO - (021) ASSIGN AND ASSIGNED/16X,          P0210250
     15HGO TO//2X,                                                      P0210260
     231HASA REFS. - 7.1.1.3 AND 7.1.2.1//2X,7HRESULTS)                 P0210270
C*****    HEADER FOR SEGMENT 021 WRITTEN                                P0210280
C*****    TEST FORWARD BRANCHING GO TO WITH ONLY ONE                    P0210290
C*****    LABEL IN THE BRANCH LIST                                      P0210300
      ASSIGN 211 TO IGVI                                                P0210310
      GO TO IGVI, (211)                                                 P0210320
C*****    TEST FORWARD BRANCHING GO TO WHICH BRANCHES                   P0210330
C*****    TO IMMEDIATELY FOLLOWING STATEMENT                            P0210340
212   MRRVI = 2                                                         P0210350
      WRITE (NUVI,8212) MRRVI                                           P0210360
      ASSIGN 213 TO GTVI                                                P0210370
      GO TO GTVI, (213)                                                 P0210380
C*****    TEST FORWARD BRANCHING GO TO WHERE ALL BRANCHES               P0210390
C*****    ARE IDENTICAL                                                 P0210400
213   MRRVI = 3                                                         P0210410
      WRITE (NUVI,8212) MRRVI                                           P0210420
      ASSIGN 214 TO GTVI                                                P0210430
      GO TO GTVI, (214,214,214)                                         P0210440
C*****    TEST FORWARD BRANCHING GO TO WITH SEVERAL UNIQUE              P0210450
C*****    BRANCHES IN THE LIST                                          P0210460
215   MRRVI = 5                                                         P0210470
      WRITE (NUVI,8212) MRRVI                                           P0210480
      ASSIGN 217 TO KGVI                                                P0210490
      ASSIGN 216 TO IGVI                                                P0210500
      GO TO IGVI, (217,218,216,219)                                     P0210510
C*****    TEST BACKWARD BRANCHING GO TO WHERE BRANCHES                  P0210520
C*****    ARE IDENTICAL                                                 P0210530
214   MRRVI = 4                                                         P0210540
      WRITE (NUVI,8212) MRRVI                                           P0210550
      ASSIGN 215 TO IGVI                                                P0210560
      GO TO IGVI, (215,215)                                             P0210570
C*****    TEST BACKWARD BRANCHING GO TO WITH ONLY ONE LABEL             P0210580
C*****    IN THE BRANCH LIST                                            P0210590
211   MRRVI = 1                                                         P0210600
      WRITE (NUVI,8212) MRRVI                                           P0210610
      ASSIGN 212 TO GTVI                                                P0210620
      GO TO GTVI, (212)                                                 P0210630
C*****    IN THE FIRST PART OF THIS TEST, ALL GO TO STATEMENTS          P0210640
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C*****    WERE EXECUTED ONLY ONCE, IMMEOIATELY AFTER THE                P0210650
C*****    INTEGER VARIABLE WAS OEFINEO.  ALL GO TO STATEMENTS           P0210660
C*****    WHICH FOLLOW WILL BE EXECUTEO MORE THAN ONCE.                 P0210670
C*****    VALUE OF IGVI IS ALWAYS 8216 IN THIS PART OF THE              P0210680
C*****    TEST UNTIL FINAL MESSAGE IS TO BE WRITTEN                     P0210690
216   MRRVI = 6                                                         P0210700
      WRITE (NUVI,8212) MRRVI                                           P0210710
      ASSIGN 8216 TO IGVI                                               P0210720
8216  GO TO KGVI, (217,219,7210,7214,8210)                              P0210730
217   MRRVI = 7                                                         P0210740
      ASSIGN 218 TO GTVI                                                P0210750
      GO TO 8211                                                        P0210760
218   MRRVI = 8                                                         P0210770
      ASSIGN 219 TO KGVI                                                P0210780
      GO TO 8213                                                        P0210790
219   MRRVI = 9                                                         P0210800
      ASSIGN 7210 TO KGVI                                               P0210810
      GO TO 8213                                                        P0210820
7210  MRRVI = 10                                                        P0210830
      ASSIGN 7211 TO GTVI                                               P0210840
      GO TO 8211                                                        P0210850
7211  MRRVI = 11                                                        P0210860
      ASSIGN 7212 TO GTVI                                               P0210870
      GO TO 8211                                                        P0210880
7212  MRRVI = 12                                                        P0210890
      ASSIGN 7213 TO GTVI                                               P0210900
      GO TO 8211                                                        P0210910
7213  MRRVI = 13                                                        P0210920
      ASSIGN 7214 TO KGVI                                               P0210930
      GO TO 8213                                                        P0210940
7214  MRRVI = 14                                                        P0210950
      ASSIGN 7215 TO GTVI                                               P0210960
      GO TO 8211                                                        P0210970
7215  MRRVI = 15                                                        P0210980
      ASSIGN 7216 TO GTVI                                               P0210990
      GO TO 8211                                                        P0211000
7216  MRRVI = 16                                                        P0211010
      ASSIGN 7217 TO GTVI                                               P0211020
      GO TO 8211                                                        P0211030
7217  MRRVI = 17                                                        P0211040
      ASSIGN 7218 TO GTVI                                               P0211050
      GO TO 8211                                                        P0211060
7218  MRRVI = 18                                                        P0211070
      ASSIGN 7219 TO GTVI                                               P0211080
      GO TO 8211                                                        P0211090
7219  MRRVI = 19                                                        P0211100
      ASSIGN 8210 TO KGVI                                               P0211110
      GO TO 8213                                                        P0211120
8210  MRRVI = 20                                                        P0211130
      ASSIGN 8214 TO IGVI                                               P0211140
      GO TO 8213                                                        P0211150
8211  WRITE (NUVI,8212) MRRVI                                           P0211160
8212  FORMAT (/6X,I2)                                                   P0211170
C*****    TEST GO TO WITH CONTINUATION CARD                             P0211180
      GO TO GTVI, (218, 7211, 7212, 7213, 7215, 7216, 7217, 7218,       P0211190
     1            7219)                                                 P0211200
8213  WRITE (NUVI,8212) MRRVI                                           P0211210
      GO TO IGVI, (8216,8214)                                           P0211220
8214  WRITE (NUVI,8215)                                                 P0211230
8215  FORMAT (1H0,2X,35HTHIS TEST IS SUCCESSFUL ONLY IF THE/            P0211240
     1  ,37HNUMBERS LISTED ABOVE ARE SEQUENTIALLY/                      P0211250
     2 X,21HIN OROER FROM 1 TO 20)                                      P0211260
C*****    END OF TEST SEGMENT 021                                       P0211270
C*****                                                                  P0211280
C*****  WHEN EXECUTING ONLY SEGMENT 021, THE  STOP  ANO  ENO            P0211290
C*****  CAROS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0211300
C*****  IN COL  1  ANO  2  REMOVEO.                                     P0211310
C=    STOP                                                              P0211320
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C=    END                                                               P0211330
      STOP                                                              P021C1
      END                                                               P021C2
C***********************************************************************P0220010
C*****                                                                  P0220020
C*****                       CGOTO - (022)                              P0220030
C*****                                                                  P0220040
C***********************************************************************P0220050
C*****  GENERAL PURPOSE                                          ASA REF P0220060
C*****    TO TEST COMPUTED GO TO STATEMENTS                 7.1.2.1.3   P0220070
C*****  RESTRICTIONS OBSERVED                                           P0220080
C*****    VALUE OF INTEGER VARIABLE IS NEVER LESS THAN 1    7.1.2.1.3/33P0220090
C*****    AND NEVER LARGER THAN THE NUMBER OF BRANCHES                  P0220100
C*****    INTEGER VARIABLES USED IN COMPUTED GO TO STMNTS.  10.2.8   /09P0220110
C*****    ARE NOT EQUATED TO AVOID SECOND LEVEL             10.3     /13P0220120
C*****    DEFINITION PROBLEMS                                           P0220130
C*****  GENERAL COMMENTS                                                P0220140
C*****    IGVI AND KGVI ARE IMPLICITLY DEFINED              5.3      /07P0220150
C*****    GTVI IS EXPLICITLY DEFINED                        7.2.1.6  /55P0220160
C*****    COMPUTED GO TO ALSO TESTED IN SEGMENT 162                     P0220170
C*****                                                                  P0220180
C*****  S P E C I F I C A T I O N S   SEGMENT 022                       P0220190
C*****                                                                  P0010510
C*****  WHEN EXECUTING ONLY SEGMENT 022, THE SPECIFICATION STATEMENTS  P0010515
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COL              P0010520
C*****  1  AND  2  REMOVED                                              P0010525
C*****                                                                  P0010530
C=    INTEGER GTVI                                                      P0010535
C*****                                                                  P0010540
      INTEGER GTVI                                                      P022A1
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0220200
C*****                                                                  P0070400
C*****  WHEN EXECUTING ONLY SEGMENT 022, THE STATEMENT  NUVI = 6        P0070405
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070410
C*****                                                                  P0070415
C=    NUVI = 6                                                          P0070420
C*****                                                                  P0070425
      NUVI = 6                                                          P022B1
      WRITE (NUVI,220)                                                  P0220210
220   FORMAT (1H1,1X,28HCGOTO - (022) COMPUTED GO TO//2X,               P0220220
     120HASA REF. - 7.1.2.1.3//2X,7HRESULTS)                            P0220230
C*****    HEADER FOR SEGMENT 022 WRITTEN                                P0220240
C*****    TEST FORWARD BRANCHING GO TO WITH ONLY ONE                    P0220250
C*****    LABEL IN BRANCH LIST                                          P0220260
      IGVI = 1                                                          P0220270
      GO TO (221), IGVI                                                 P0220280
C*****    TEST FORWARD BRANCHING GO TO WHICH BRANCHES                   P0220290
C*****    TO IMMEDIATELY FOLLOWING STATEMENT                            P0220300
222   MRRVI = 2                                                         P0220310
      WRITE (NUVI,8222) MRRVI                                           P0220320
      GO TO (223), GTVI                                                 P0220330
C*****                                                                  P0220340
C*****    TEST FORWARD BRANCHING GO TO WHERE SOME BRANCHES              P0220350
C*****    ARE IDENTICAL                                                 P0220360
223   MRRVI = 3                                                         P0220370
      WRITE (NUVI,8222) MRRVI                                           P0220380
      GTVI = 2                                                          P0220390
      GO TO (225,224,225), GTVI                                         P0220400
C*****    TEST FORWARD BRANCHING GO TO WITH SEVERAL UNIQUE              P0220410
C*****    BRANCHES IN LIST                                              P0220420
225   MRRVI = 5                                                         P0220430
      WRITE (NUVI,8222) MRRVI                                           P0220440
      KGVI = 1                                                          P0220450
      IGVI = 3                                                          P0220460
      GO TO (227,228,226,229), IGVI                                     P0220470
C*****    TEST BACKWARD BRANCHING GO TO WHERE SOME                      P0220480
C*****    BRANCHES ARE IDENTICAL                                        P0220490
224   MRRVI = 4                                                         P0220500
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      WRITE (NUVI,8222) MRRVI                                           P0220510
      IGVI = 4                                                          P0220520
      GO TO (226,226,226,225), IGVI                                     P0220530
C*****    TEST BACKWARD BRANCHING GO TO WITH ONLY ONE                   P0220540
C*****    LABEL IN BRANCH LIST                                          P0220550
221   MRRVI = 1                                                         P0220560
      WRITE (NUVI, 8222) MRRVI                                          P0220570
      GTVI = 1                                                          P0220580
      GO TO (222), GTVI                                                 P0220590
C*****    IN THE FIRST PART OF THIS TEST, ALL GO TO STATEMENTS          P0220600
C*****    WERE EXECUTED ONLY ONCE, IMMEDIATELY AFTER THE                P0220610
C*****    INTEGER VARIABLE WAS DEFINED.  ALL GO TO STATEMENTS           P0220620
C*****    WHICH FOLLOW WILL BE EXECUTED MORE THAN ONCE.                 P0220630
C*****    VALUE OF IGVI IS ALWAYS 1 IN THIS PART OF THE TEST            P0220640
C*****    UNTIL THE FINAL MESSAGE IS TO BE WRITTEN                      P0220650
226   MRRVI = 6                                                         P0220660
      IGVI = 1                                                          P0220670
      WRITE (NUVI,8222) MRRVI                                           P0220680
8226  GO TO (227,229,7220,7224,8220), KGVI                              P0220690
227   MRRVI = 7                                                         P0220700
      GTVI = 1                                                          P0220710
      GO TO 8221                                                        P0220720
228   MRRVI = 8                                                         P0220730
      KGVI = 2                                                          P0220740
      GO TO 8223                                                        P0220750
229   MRRVI = 9                                                         P0220760
      KGVI = 3                                                          P0220770
      GO TO 8223                                                        P0220780
7220  MRRVI = 10                                                        P0220790
      GTVI = 2                                                          P0220800
      GO TO 8221                                                        P0220810
7221  MRRVI = 11                                                        P0220820
      GTVI = 5                                                          P0220830
      GO TO 8221                                                        P0220840
7222  MRRVI = 12                                                        P0220850
      GTVI = 4                                                          P0220860
      GO TO 8221                                                        P0220870
7223  MRRVI = 13                                                        P0220880
      KGVI = 4                                                          P0220890
      GO TO 8223                                                        P0220900
7224  MRRVI = 14                                                        P0220910
      GTVI = 6                                                          P0220920
      GO TO 8221                                                        P0220930
7225  MRRVI = 15                                                        P0220940
      GTVI = 7                                                          P0220950
      GO TO 8221                                                        P0220960
7226  MRRVI = 16                                                        P0220970
      GTVI = 9                                                          P0220980
      GO TO 8221                                                        P0220990
7227  MRRVI = 17                                                        P0221000
      GTVI = 8                                                          P0221010
      GO TO 8221                                                        P0221020
7228  MRRVI = 18                                                        P0221030
      GTVI = 3                                                          P0221040
      GO TO 8221                                                        P0221050
7229  MRRVI = 19                                                        P0221060
      KGVI = 5                                                          P0221070
      GO TO 8223                                                        P0221080
8220  MRRVI = 20                                                        P0221090
      IGVI = 2                                                          P0221100
      GO TO 8223                                                        P0221110
8221  WRITE (NUVI,8222) MRRVI                                           P0221120
8222  FORMAT(/6X,I2)                                                    P0221130
C*****    TEST GO TO STATEMENT WITH CONTINUATION LINE                   P0221140
      GO TO (228, 7221, 7229, 7223, 7222, 7225, 7226, 7228,             P0221150
     1         7227), GTVI                                              P0221160
8223  WRITE (NUVI,8222) MRRVI                                           P0221170
      GO TO (8226,8224), IGVI                                           P0221180
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8224  WRITE (NUVI,8225)                                                 P0221190
8225  FORMAT (1H0,2X,35HTHIS TEST IS SUCCESSFUL ONLY IF THE/            P0221200
     12X,37HNUMBERS LISTED ABOVE ARE SEQUENTIALLY/                      P0221210
     22X,21HIN ORDER FROM 1 TO 20)                                      P0221220
C*****    END OF TEST SEGMENT 022                                       P0221230
C*****                                                                  P0221240
C*****  WHEN EXECUTING ONLY SEGMENT 022, THE  STOP  AND  END            P0221250
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0221260
C*****  IN COL  1  AND  2  REMOVED.                                     P0221270
C=    STOP                                                              P0221280
C=    END                                                               P0221290
      STOP                                                              P022C1
      END                                                               P022C2
C***********************************************************************P0300010
C*****                                                                  P0300020
C*****                       ARBAD - (030)                              P0300030
C*****                                                                  P0300040
C***********************************************************************P0300050
C*****  GENERAL PURPOSE                                         ASA REF P0300060
C*****    TEST THAT EXPRESSIONS INVOLVING THE ADDITION            6.1   P0300070
C*****    OF INTEGER OR REAL VALUES MAY BE FORMED                       P0300080
C*****  GENERAL COMMENTS                                                P0300090
C*****    TYPES ARE NEVER MIXED.                                        P0300100
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED              P0300110
C*****    IN A VARIETY OF COMBINATIONS.                                 P0300120
C*****                                                                  P0300130
C*****  S P E C I F I C A T I O N S   SEGMENT 030                       P0300140
C*****                                                                  P0010550
C*****  WHEN EXECUTING ONLY SEGMENT 030, THE SPECIFICATION STATEMENTS   P0010555
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COL               P0010560
C*****  1  AND  2  REMOVED                                              P0010565
C*****                                                                  P0010570
C=    DIMENSION A1S(5),A2S(2,2),IAC1I(5),IAC2I(2,7)                     P0010575
C*****                                                                  P0010580
      DIMENSION A1S(5),A2S(2,2),IAC1I(5),IAC2I(2,7)                     P030A1
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0300150
C*****                                                                  P0070430
C*****  WHEN EXECUTING ONLY SEGMENT 030, THE STATEMENT  NUVI = 6        P0070435
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070440
C*****                                                                  P0070445
C=    NUVI = 6                                                          P0070450
C*****                                                                  P0070455
      NUVI = 6                                                          P030B1
      WRITE (NUVI,301)                                                  P0300160
301   FORMAT (1H1,1X,28HARBAD - (030) BASIC ADDITION//2X,               P0300170
     -14HASA REF. - 6.1//2X,7HRESULTS)                                  P0300180
C*****    HEADER FOR SEGMENT 030 WRITTEN                                P0300190
      WRITE (NUVI,302)                                                  P0300200
302   FORMAT (//2X,16HINTEGER ADDITION)                                 P0300210
C*****    TEST 1 - ADD 2 INTEGER VARIABLES (ONE CONTAINS MINUS VALUE)   P0300220
      MRRVI=1                                                           P0300230
      JACVI=2                                                           P0300240
      KBCVI = -2                                                        P0300250
      IHDVI=JACVI+KBCVI                                                 P0300260
      WRITE (NUVI,303) MRRVI, IHDVI                                     P0300270
303   FORMAT (/6H  TEST,I3,I6)                                          P0300280
C*****    TEST 2 - REVERSE VARIABLES IN TEST 1                          P0300290
      MRRVI = 2                                                         P0300300
      IGDVI=KBCVI+JACVI                                                 P0300310
      WRITE (NUVI,303) MRRVI, IGDVI                                     P0300320
C*****    TEST 3 - ADD 2 CONSTANTS                                      P0300330
      MRRVI = 3                                                         P0300340
      IAC1I(1) = 2+(-2)                                                 P0300350
      WRITE (NUVI,303) MRRVI, IAC1I(1)                                  P0300360
C*****    TEST 4 - ADD 2 ARRAY ELEMENTS (ONE CONTAINS MINUS VALUE)      P0300370
      MRRVI = 4                                                         P0300380
      IAC1I(3) = 3                                                      P0300390
      IAC2I(1,3) = - 3                                                  P0300400
      IAC2I(2,2) = IAC1I(3)+IAC2I(1,3)                                  P0300410
      WRITE (NUVI,303) MRRVI, IAC2I(2,2)                                P0300420
C*****    TEST 5 - ADD 8 INTEGER VARIABLES                              P0300430
      MRRVI = 5                                                         P0300440
      LCCVI = -6                                                        P0300450
      MDCVI=-2                                                          P0300460
      NECVI = +18                                                       P0300470
      IFDVI = JACVI+KBCVI+LCCVI+MDCVI+MDCVI+LCCVI+KBCVI+NECVI           P0300480
      WRITE (NUVI,303) MRRVI, IFDVI                                     P0300490
C*****    TEST 6 - ADD COMBINATION OF VARIABLES, ARRAY ELEMENTS         P0300500
C*****    AND CONSTANTS                                                 P0300510
      MRRVI = 6                                                         P0300520
      IAC2I(2,2) = -2                                                   P0300530
      IFDVI = IAC1I(3)+IAC2I(1,3)+IAC2I(2,2)+JACVI+KBCVI+LCCVI+7+1      P0300540
      WRITE (NUVI,303) MRRVI, IFDVI                                     P0300550
C*****    TEST 7 - ADD 2 REAL VARIABLES                                 P0300560
      WRITE (NUVI,304)                                                  P0300570
304   FORMAT (//15H  REAL ADDITION)                                     P0300580
      MRRVI = 7                                                         P0300590
      ACVS = -2.0                                                       P0300600
      BCVS = 2.0E0                                                      P0300610
      HHCVS = ACVS+BCVS                                                 P0300620
      WRITE (NUVI,305) MRRVI, HHCVS                                     P0300630
305   FORMAT (/6H  TEST,I3,F7.1)                                        P0300640
C*****    TEST 8 - REVERSE ORDER OF VARIABLES IN TEST 7                 P0300650
      MRRVI = 8                                                         P0300660
      GGCVS = BCVS + ACVS                                               P0300670
      WRITE (NUVI,305) MRRVI, GGCVS                                     P0300680
C*****    TEST 9 - ADD 4 REAL VARIABLES                                 P0300690
      MRRVI = 9                                                         P0300700
      FFCVS = ACVS + BCVS + ACVS + BCVS                                 P0300710
      WRITE (NUVI,305) MRRVI, FFCVS                                     P0300720
C*****    TEST 10 - ADD 2 REAL CONSTANTS                                P0300730
      MRRVI = 10                                                        P0300740
      A2S(1,2) = 3.5 + (-3.5)                                           P0300750
      WRITE (NUVI,305) MRRVI, A2S(1,2)                                  P0300760
C*****    TEST 11 - ADD REAL ARRAY ELEMENTS                             P0300770
      MRRVI = 11                                                        P0300780
      A1S(1) = -25.E-1                                                  P0300790
      ACVS  = 2.5                                                       P0300800
      A2S  (1,1) = -7.0                                                 P0300810
      FFCVS = A1S(1) + A2S(1,1) + 9.5                                   P0300820
      WRITE ( NUVI,305) MRRVI, FFCVS                                    P0300830
C*****    TEST 12 - ADD COMBINATION OF VARIABLES, ARRAY ELEMENTS        P0300840
C*****    AND CONSTANTS                                                 P0300850
      MRRVI = 12                                                        P0300860
      FFCVS = A1S(1) + ACVS + 7.0 + A2S(1,1)                            P0300870
      WRITE (NUVI,305) MRRVI, FFCVS                                     P0300880
      WRITE (NUVI,306)                                                  P0300890
306   FORMAT (//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/                 P0300900
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0300910
C*****    END OF TEST SEGMENT 030                                       P0300920
C*****                                                                  P0300930
C*****  WHEN EXECUTING ONLY SEGMENT 030, THE  STOP  AND  END            P0300940
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0300950
C*****  IN COL  1  AND  2  REMOVED.                                     P0300960
C=    STOP                                                              P0300970
C=    END                                                               P0300980
      STOP                                                              P030C1
      END                                                               P030C2
C***********************************************************************P0310010
C*****                                                                  P0310020
C*****                       ARFAD - (031)                              P0310030
C*****                                                                  P0310040
C***********************************************************************P0310050
C*****  GENERAL PURPOSE                                        ASA REF  P0310060
C*****    TEST THAT EXPRESSIONS INVOLVING THE ADDITION OF        6.1    P0310070
C*****    DOUBLE PRECISION VALUES MAY BE FORMED                         P0310080
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C*****  GENERAL COMMENTS                                                P0310090
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0310100
C*****   VARIETY OF COMBINATIONS                                        P0310110
C*****                                                                  P0310120
C*****  S P E C I F I C A T I O N S   SEGMENT 031                       P0310130
C*****                                                                  P0010590
C*****  WHEN EXECUTING ONLY SEGMENT 031, THE SPECIFICATION STATEMENTS   P0010595
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COL               P0010600
C*****  1  AND  2  REMOVED                                              P0010605
C*****                                                                  P0010610
C=    DOUBLE PRECISION ACVD,BCVD,FFCVD,GGCVD,HHCVD                      P0010615
C=   1,EP1D(43),BC2D(7,4),CC3D(7,2,2)                                   P0010620
C*****                                                                  P0010625
      DOUBLE PRECISION ACVD,BCVD,FFCVD,GGCVD,HHCVD                      P031A1
     1,EP1D(43),BC2D(7,4),CC3D(7,2,2)                                   P031A2
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0310140
C*****                                                                  P0070460
C*****  WHEN EXECUTING ONLY SEGMENT 031, THE STATEMENT  NUVI = 6        P0070465
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070470
C*****                                                                  P0070475
C=    NUVI = 6                                                          P0070480
C*****                                                                  P0070485
      NUVI = 6                                                          P031B1
      WRITE (NUVI,310)                                                  P0310150
310   FORMAT (1H1,1X,27HARFAD - (031) D.P. ADDITION//                   P0310160
     -16H  ASA REF. - 6.1//9H  RESULTS)                                 P0310170
C*****     HEADER FOR SEGMENT 031 WRITTEN                               P0310180
      ACVD =  -.01414213562373095D2                                     P0310190
      BCVD = 14.14213562373095D-1                                       P0310200
      EP1D(20) = -4.12310562561766D0                                    P0310210
      BC2D(6,3) =    .206155281280883D1                                 P0310220
      HHCVD=ACVD+BCVD                                                   P0310230
      GGCVD=BCVD+ACVD                                                   P0310240
      EP1D(34) = .003D3 + (-300.0D-2)                                   P0310250
      FFCVD = BCVD+ACVD+ACVD+BCVD                                       P0310260
      CC3D(7,1,1)=EP1D(20)+BC2D(6,3)+206.155281280883D-2 +41.23105625617P0310270
     166D-1 + EP1D(20)                                                  P0310280
      WRITE (NUVI,312) HHCVD, GGCVD, FFCVD, EP1D(34), CC3D(7,1,1)       P0310290
312   FORMAT (//5(D22.10//)//38H  THE 5 ANSWERS ABOVE SHOULD BE 0 PLUS/ P0310300
     137H  OR MINUS AN ERROR FACTOR OF 0.1D-13)                         P0310310
C*****     END OF TEST SEGMENT 031                                      P0310320
C*****                                                                  P0310330
C*****  WHEN EXECUTING ONLY SEGMENT 031, THE  STOP  AND  END            P0310340
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0310350
C*****  IN COL  1  AND  2  REMOVED.                                     P0310360
C=    END                                                               P0310370
C=    STOP                                                              P0310380
      STOP                                                              P031C1
      END                                                               P031C2
C***********************************************************************P0320010
C*****                                                                  P0320020
C*****                       ARBSB - (032)                              P0320030
C*****                                                                  P0320040
C***********************************************************************P0320050
C*****  GENERAL PURPOSE                                         ASA REF P0320060
C*****    TEST THAT EXPRESSIONS INVOLVING THE SUBTRACTION OF      6.1   P0320070
C*****    INTEGER OR REAL VALUES MAY BE FORMED                          P0320080
C*****  GENERAL COMMENTS                                                P0320090
C*****    TYPES ARE NEVER MIXED                                         P0320100
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0320110
C*****    VARIETY OF COMBINATIONS.                                      P0320120
C*****  S P E C I F I C A T I O N S   SEGMENT 032                       P0320130
C*****                                                                  P0010630
C*****  WHEN EXECUTING ONLY SEGMENT 032, THE SPECIFICATION STATEMENTS   P0010635
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COLUMNS           P0010640
C*****  1  AND  2  REMOVED                                              P0010645
C*****                                                                  P0010650
C=    DIMENSION A1S(5),A2S(2,2),IAC1I(5),IAC2I(2,7)                     P0010655
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C*****                                                                  P0010660
      DIMENSION A1S(5),A2S(2,2),IAC1I(5),IAC2I(2,7)                     P032A1
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0320140
C*****                                                                  P0070490
C*****  WHEN EXECUTING ONLY SEGMENT 032, THE STATEMENT  NUVI = 6        P0070495
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070500
C*****                                                                  P0070505
C=    NUVI = 6                                                          P0070510
C*****                                                                  P0070515
      NUVI = 6                                                          P032B1
      WRITE (NUVI,320)                                                  P0320150
320   FORMAT (1H1,1X,31HARBSB - (032) BASIC SUBTRACTION//               P0320160
     1 17H  ASA REFS. - 6.1//2X,7HRESULTS)                              P0320170
C*****    HEADER FOR SEGMENT 032 WRITTEN                                P0320180
      MRRVI = 1                                                         P0320190
      WRITE (NUVI,321)MRRVI                                             P0320200
321   FORMAT (//2X,4HTEST,I1,1X,19HINTEGER SUBTRACTION)                 P0320210
      JACVI=3                                                           P0320220
      IAC1I(1)=3                                                        P0320230
      IHDVI=JACVI-IAC1I(1)                                              P0320240
      IGDVI=IAC1I(1)-JACVI                                              P0320250
      IFDVI=JACVI-IAC1I(1)-IAC1I(1)+JACVI                               P0320260
      IAC2I(2,3) = 3-2-1                                                P0320270
      IAC2I(1,1) = 6 - JACVI - IAC1I(1)                                 P0320280
      WRITE (NUVI,323) IHDVI,IGDVI, IFDVI, IAC2I(2,3), IAC2I(1,1)       P0320290
323   FORMAT (/5(I11/))                                                 P0320300
      MRRVI = 2                                                         P0320310
328   WRITE (NUVI,329)MRRVI                                             P0320320
329   FORMAT (//2X,4HTEST,I1,1X,16HREAL SUBTRACTION)                    P0320330
      ACVS=5.1E1                                                        P0320340
      BCVS=.51E2                                                        P0320350
      HHCVS=ACVS-BCVS                                                   P0320360
      GGCVS=BCVS-ACVS                                                   P0320370
      FFCVS=ACVS-BCVS+BCVS-ACVS                                         P0320380
      A2S(1,2) = 2.1E1                                                  P0320390
      A1S(1) = ACVS - A2S(1,2) - 30.0                                   P0320400
      WRITE (NUVI,324) HHCVS, GGCVS, FFCVS, A1S(1)                      P0320410
324   FORMAT (/4(F11.1/)/34H ALL ABOVE ANSWERS SHOULD BE 0 FOR/         P0320420
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0320430
C*****    END OF TEST SEGMENT 032                                       P0320440
C*****                                                                  P0320450
C*****  WHEN EXECUTING ONLY SEGMENT 032, THE  STOP  AND  END            P0320460
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0320470
C*****  IN COL  1  AND  2  REMOVED.                                     P0320480
C=    STOP                                                              P0320490
C=    END                                                               P0320500
      STOP                                                              P032C1
      END                                                               P032C2
C***********************************************************************P0330010
C*****                                                                  P0330020
C*****                        ARFSB - (033)                             P0330030
C*****                                                                  P0330040
C***********************************************************************P0330050
C*****  GENERAL PURPOSE                                         ASA REF P0330060
C*****    TEST THAT EXPRESSIONS INVOLVING THE SUBTRACTION OF      6.1   P0330070
C*****    DOUBLE PRECISION VALUES MAY BE FORMED                         P0330080
C*****  GENERAL COMMENTS                                                P0330090
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0330100
C*****    VARIETY OF COMBINATIONS                                       P0330110
C*****                                                                  P0330120
C*****  S P E C I F I C A T I O N S   SEGMENT 033                       P0330130
C*****                                                                  P0010670
C*****  WHEN EXECUTING ONLY SEGMENT 033, THE SPECIFICATION STATEMENTS   P0010675
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COLUMNS           P0010680
C*****  1  AND  2  REMOVED                                              P0010685
C*****                                                                  P0010690
C=    DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,GGCVD,HHCVD,DPCVD,FFCVD      P0010695
C=   1,AC1D(10),A2D(2,2),A3D(2,2,2)                                     P0010700
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C*****                                                                  P0010705
      DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,GGCVD,HHCVD,DPCVD,FFCVD      P033A1
     1,AC1D(10),A2D(2,2),A3D(2,2,2)                                     P033A2
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0330140
C*****                                                                  P0070520
C*****  WHEN EXECUTING ONLY SEGMENT 033, THE STATEMENT  NUVI = 6        P0070525
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070530
C*****                                                                  P0070535
C=    NUVI = 6                                                          P0070540
C*****                                                                  P0070545
      NUVI = 6                                                          P033B1
      WRITE (NUVI,330)                                                  P0330150
330   FORMAT (1H1,1X,30HARFSB - (033) D.P. SUBTRACTION//                P0330160
     -16H  ASA REF. - 6.1//2X,7HRESULTS)                                P0330170
C*****    HEADER FOR SEGMENT 033 WRITTEN                                P0330180
      ACVD=1.0D2                                                        P0330190
      BCVD=.3D1                                                         P0330200
      CCVD=15.D0                                                        P0330210
      AC1D(1) = 60.D-1                                                  P0330220
      A2D(1,1) = -.02D2                                                 P0330230
      A3D(1,2,1) = 4000.D-3                                             P0330240
C*****    TWO TERM SUBTRACTION                                          P0330250
      HHCVD= ACVD-BCVD                                                  P0330260
      HHCVD= HHCVD-97.0D0                                               P0330270
      GGCVD=1.0D0-AC1D(1)                                               P0330280
      GGCVD=GGCVD+5.0D0                                                 P0330290
      DCVD = 4.0D0 - A3D(1,2,1)                                         P0330300
      WRITE (NUVI,331) HHCVD, GGCVD, DCVD                               P0330310
C*****    THREE TERM SUBTRACTION                                        P0330320
      HHCVD= ACVD-BCVD-97.0D0                                           P0330330
      GGCVD = 16.0D0 - CCVD - 1.0D0                                     P0330340
      DCVD = A3D(1,2,1)-A2D(1,1) -6.0D0                                 P0330350
      WRITE (NUVI,331) HHCVD, GGCVD, DCVD                               P0330360
C*****    FOUR TERM SUBTRACTION                                         P0330370
      DPCVD = 6.85565460040104D0                                        P0330380
      FFCVD = (+.342782730020052D1)                                     P0330390
      GGCVD = DPCVD - FFCVD - 42.782730020052D-2 - 300D-2               P0330400
      HHCVD=ACVD-AC1D(1)-AC1D(1)-8.8D1                                  P0330410
      DCVD = CCVD - A2D(1,1) - 110.D-1 - AC1D(1)                        P0330420
      WRITE (NUVI,332) HHCVD, DCVD   , GGCVD                            P0330430
331   FORMAT (//3(D22.10/))                                             P0330440
332   FORMAT (//3(D22.10/)//36H  THE ANSWERS ABOVE SHOULD BE 0 PLUS/    P0330450
     137H  OR MINUS AN ERROR FACTOR OF 0.1D-13)                         P0330460
C*****    END OF TEST SEGMENT 033                                       P0330470
C*****                                                                  P0330480
C*****  WHEN EXECUTING ONLY SEGMENT 033, THE  STOP  AND  END            P0330490
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0330500
C*****  IN COL  1  AND  2  REMOVED.                                     P0330510
C=    STOP                                                              P0330520
C=    END                                                               P0330530
      STOP                                                              P033C1
      END                                                               P033C2
C***********************************************************************P0340010
C*****                                                                  P0340020
C*****                        ARBAS - (034)                             P0340030
C*****                                                                  P0340040
C***********************************************************************P0340050
C*****  GENERAL PURPOSE                                          ASA REF P0340060
C*****    TEST THAT EXPRESSIONS INVOLVING THE ADDITION AND        6.1   P0340070
C*****    SUBTRACTION (COMBINED) OF INTEGER OR REAL VALUES MAY BE       P0340080
C*****    FORMED.                                                       P0340090
C*****  GENERAL COMMENTS                                                P0340100
C*****    TYPES ARE NEVER MIXED.                                        P0340110
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN           P0340120
C*****    A VARIETY OF COMBINATIONS.                                    P0340130
C*****                                                                  P0340140
C*****  S P E C I F I C A T I O N S   SEGMENT 034                       P0340150
C*****                                                                  P0010710
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C*****  WHEN EXECUTING ONLY SEGMENT 034, THE SPECIFICATION STATEMENTS  P0010715
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE C= IN COLUMNS           P0010720
C*****  1  AND  2  REMOVED                                              P0010725
C*****                                                                  P0010730
C=    DIMENSION A2S(2,2),A3S(3,3,3)                                     P0010735
C=   1,IAC1I(5),IAC2I(2,7),AC1S(25)                                     P0010740
C=    INTEGER MCA3I(2,3,3)                                              P0010745
C*****                                                                  P0010750
      DIMENSION A2S(2,2),A3S(3,3,3)                                     P034A1
     1,IAC1I(5),IAC2I(2,7),AC1S(25)                                     P034A2
      INTEGER MCA3I(2,3,3)                                              P034A3
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0340160
C*****                                                                  P0070550
C*****  WHEN EXECUTING ONLY SEGMENT 034, THE STATEMENT  NUVI = 6        P0070555
C*****  MUST HAVE THE C= IN COL 1 AND 2 REMOVED.                        P0070560
C*****                                                                  P0070565
C=    NUVI = 6                                                          P0070570
C*****                                                                  P0070575
      NUVI = 6                                                          P034B1
      WRITE (NUVI,340)                                                  P0340170
340   FORMAT (1H1,1X,32HARBAS - (034) BASIC ADDITION AND/14X,           P0340180
     113H SUBTRACTION//16H  ASA REF. - 6.4//                            P0340190
     22X,7HRESULTS)                                                     P0340200
C*****    HEADER FOR SEGMENT 034 WRITTEN                                P0340210
      WRITE (NUVI,341)                                                  P0340220
341   FORMAT   (//2X,26HTEST1 INTEGER ADD AND SUBT)                     P0340230
      JACVI = 5                                                         P0340240
      KBCVI = 1                                                         P0340250
      LCCVI = 10                                                        P0340260
      MDCVI = -2                                                        P0340270
      IAC1I(2) = 3                                                      P0340280
      IAC2I(2,2) = -3                                                   P0340290
      IHDVI = JACVI+KBCVI-LCCVI+MDCVI-IAC1I(2)+9                        P0340300
      IGDVI = (JACVI+KBCVI) - (MDCVI-IAC1I(2)) - 11                     P0340310
      IFDVI =(6 + (KBCVI - (LCCVI+MDCVI))) + 1                          P0340320
      MCA3I(1,1,1) = IAC2I(2,2) - JACVI - MDCVI - KBCVI + 7 + 0         P0340330
      WRITE (NUVI,342) IHDVI,IGDVI, IFDVI, MCA3I(1,1,1)                 P0340340
342   FORMAT (/4(I11/))                                                 P0340350
C*****    HEADER FOR TEST2                                              P0340360
      WRITE (NUVI,344)                                                  P0340370
344   FORMAT   (/2X,24HTEST2 REAL ADD AND SUBTR)                        P0340380
      ACVS = 5.0                                                        P0340390
      BCVS = 1.0                                                        P0340400
      CCVS = 10.0                                                       P0340410
      DCVS = -.2E+1                                                     P0340420
      AC1S(1) = 30.E-1                                                  P0340430
      A2S  (2,1) = 6.0                                                  P0340440
      HHDVS= ACVS + BCVS - CCVS + DCVS +9.0-AC1S(1)                     P0340450
      GGDVS= (ACVS + 1.0) -11.0  - ( DCVS-AC1S(1))                      P0340460
      FFDVS= (6.0 + (BCVS-(CCVS+DCVS))) + 1.0                           P0340470
      A3S(1,1,2) = A2S(2,1) - CCVS + 8.0 - 4.0                          P0340480
      WRITE (NUVI,343) HHDVS, GGDVS, FFDVS, A3S(1,1,2)                  P0340490
343   FORMAT (//4(F11.1/)/35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/       P0340500
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0340510
C*****    END OF TEST SEGMENT 034                                       P0340520
C*****                                                                  P0340530
C*****  WHEN EXECUTING ONLY SEGMENT 034, THE  STOP  AND  END            P0340540
C*****  CARDS WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=           P0340550
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0340560
C=    STOP                                                              P0340570
C=    END                                                               P0340580
      STOP                                                              P034C1
      END                                                               P034C2
C***********************************************************************P0350010
C*****                                                                  P0350020
C*****                        ARFAS - (035)                             P0350030
C*****                                                                  P0350040
C***********************************************************************P0350050
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C*****  GENERAL PURPOSE                                         ASA REF P0350060
C*****    TEST THAT EXPRESSIONS INVOLVING THE ADDITION AND        6.1   P0350070
C*****    SUBTRACTION (COMBINED) OF DOUBLE PRECISION VALUES             P0350080
C*****    MAY BE FORMED                                                 P0350090
C*****  GENERAL COMMENTS                                                P0350100
C*****    VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0350110
C*****    VARIETY OF COMBINATIONS                                       P0350120
C*****                                                                  P0350130
C*****  S P E C I F I C A T I O N S  SEGMENT 035                        P0350140
C*****                                                                  P0010760
C*****  WHEN EXECUTING ONLY SEGMENT 035, THE SPECIFICATION STATEMENTS   P0010765
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0010770
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0010775
C*****                                                                  P0010780
C=    DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,FFDVD,GGDVD,HHDVD            P0010785
C=   1,AC1D(10),BC2D(7,4),CC3D(7,2,2)                                   P0010790
      DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,FFDVD,GGDVD,HHDVD            P035A1
     1,AC1D(10),BC2D(7,4),CC3D(7,2,2)                                   P035A2
C*****                                                                  P0010795
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0350150
C*****  WHEN EXECUTING ONLY SEGMENT 035, THE FOLLOWING STATEMENT        P0070580
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0070585
C*****                                                                  P0070590
C=    NUVI = 6                                                          P0070595
      NUVI = 6                                                          P035B1
      WRITE (NUVI,350)                                                  P0350160
350   FORMAT (1H1,1X,32HARFAS - (035) D.P. ADD AND SUBTR//2X,           P0350170
     -14HASA REF. - 6.1//2X,7HRESULTS)                                  P0350180
C*****    HEADER FOR SEGMENT 035 WRITTEN                                P0350190
      ACVD = 5.0D0                                                      P0350200
      BCVD = 10.0D-1                                                    P0350210
      CCVD = 10.0D0                                                     P0350220
      DCVD = -0.2D1                                                     P0350230
      AC1D(1)= 300.0D-2                                                 P0350240
      BC2D(6,3) = 400.D-2                                               P0350250
      AC1D(2) = .24816326424816D5                                       P0350260
      BC2D(5,3) = -.12408163212408D5                                    P0350270
      HHDVD = ACVD + BCVD - CCVD + DCVD + 9.0D0 - AC1D(1)               P0350280
      GGDVD = (ACVD + 1.0E0) - 11.0E0 -(DCVD - AC1D(1))                 P0350290
      FFDVD = (6.0D0+(BCVD-(CCVD+DCVD))) + 10.0D-1                      P0350300
      CC3D(6,1,1) = CCVD-DCVD+BC2D(6,3)-ACVD-11.0D0                     P0350310
      CC3D(5,1,2) = AC1D(2) + BC2D(5,3) - 12408.163212408D0             P0350320
      WRITE (NUVI,351) HHDVD, GGDVD, FFDVD, CC3D(6,1,1), CC3D(5,1,2)    P0350330
351   FORMAT (//5(D22.10/)//35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/     P0350340
     1 32H  THIS SEGMENT TO BE SUCCESSFUL./36H  VALUES WITH EXPONENTS LEP0350350
     2SS THAN   /31H  10**(-14) ARE CONSIDERED ZERO)                    P0350360
C*****    END OF TEST SEGMENT 035                                       P0350370
C*****                                                                  P0350380
C*****  WHEN EXECUTING ONLY SEGMENT 035, THE  STOP  AND  END            P0350390
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0350400
C*****  IN COL  1  AND  2  REMOVED.                                     P0350410
C=    STOP                                                              P0350420
C=    END                                                               P0350430
      STOP                                                              P035C1
      END                                                               P035C2
C***********************************************************************P0360010
C*****                                                                  P0360020
C*****                        ARBMI - (036)                             P0360030
C*****                                                                  P0360040
C***********************************************************************P0360050
C*****  GENERAL PURPOSE                                         ASA REF P0360060
C*****    TEST THAT EXPRESSIONS INVOLVING MULTIPLICATION OF       6.1   P0360070
C*****    INTEGER VALUES MAY BE FORMED.                                 P0360080
C*****  GENERAL COMMENTS                                                P0360090
C*****    INTEGER SUBTRACTION ASSUMED WORKING                           P0360100
C*****  * VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED              P0360110
C*****    IN A VARIETY OF COMBINATIONS.                                 P0360120
C*****                                                                  P0360130
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C*****  S P E C I F I C A T I O N S  SEGMENT 036                        P0360140
C*****                                                                  P0010800
C*****  WHEN EXECUTING ONLY SEGMENT 036, THE SPECIFICATION STATEMENTS   P0010805
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0010810
C*****  1  AND  2  REMOVED.                                             P0010815
C*****                                                                  P0010820
C=    DIMENSION IAC1I(5), IAC2I(2,7)                                    P0010825
      DIMENSION IAC1I(5), IAC2I(2,7)                                    P036A1
C*****                                                                  P0010830
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0360150
C*****                                                                  P0070600
C*****  WHEN EXECUTING ONLY SEGMENT 036, THE FOLLOWING STATEMENT        P0070605
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070610
C*****                                                                  P0070615
C=    NUVI = 6                                                          P0070620
      NUVI = 6                                                          P036B1
C*****                                                                  P0070625
      WRITE (NUVI,360)                                                  P0360160
360   FORMAT (1H1, 1X,36HARBMI - (036) INTEGER MULTIPLICATION//         P0360170
     116H  ASA REF. - 6.1//2X,7HRESULTS)                                P0360180
C*****    HEADER FOR SEGMENT 036 WRITTEN                                P0360190
      JACVI=1                                                           P0360200
      KBCVI=2                                                           P0360210
      LCCVI=0                                                           P0360220
      MDCVI=-5                                                          P0360230
      IAC1I(2) = -10                                                    P0360240
      IAC2I(1,2) = 3                                                    P0360250
      IHDVI=JACVI*KBCVI                                                 P0360260
      IGDVI=KBCVI*MDCVI*LCCVI                                           P0360270
      IFDVI = MDCVI*JACVI*IAC1I(2)*3                                    P0360280
      IEDVI=-3*JACVI*(-MDCVI)*JACVI*KBCVI                               P0360290
      IDDVI=KBCVI*KBCVI*KBCVI*KBCVI*KBCVI*JACVI                         P0360300
      ICDVI = (-IAC1I(2))*JACVI*KBCVI*JACVI*KBCVI*JACVI*1               P0360310
      IAC2I(1,1)=IAC2I(1,2)*MDCVI*IAC1I(2)*2                            P0360320
      IHDVI = IHDVI - 2                                                 P0360330
      IFDVI = IFDVI - 150                                               P0360340
      IEDVI = IEDVI + 30                                                P0360350
      IDDVI = IDDVI - 32                                                P0360360
      ICDVI = ICDVI - 40                                                P0360370
      IAC2I(1,1) = IAC2I(1,1) - 300                                     P0360380
      WRITE (NUVI,361) IHDVI, IGDVI, IFDVI, IEDVI, IDDVI, ICDVI,        P0360390
     1                 IAC2I(1,1)                                       P0360400
361   FORMAT (//7(I10/)//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/       P0360410
     1  31H  THIS SEGMENT TO BE SUCCESSFUL)                             P0360420
C*****    END OF TEST SEGMENT 036                                       P0360430
C*****                                                                  P0360440
C*****  WHEN EXECUTING ONLY SEGMENT 036, THE  STOP  AND  END            P0360450
C*****  CARDS, WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=              P0360460
C*****  IN COL  1  AND  2  REMOVED.                                     P0360470
C=    STOP                                                              P0360480
C=    END                                                               P0360490
      STOP                                                              P036C1
      END                                                               P036C2
C***********************************************************************P0370010
C*****                                                                  P0370020
C*****                        ARBMR - (037)                             P0370030
C*****                                                                  P0370040
C***********************************************************************P0370050
C*****  GENERAL PURPOSE                                         ASA REF P0370060
C*****    TEST THAT EXPRESSIONS INVOLVING MULTIPLICATION OF       6.1   P0370070
C*****    REAL VALUES MAY BE FORMED                                     P0370080
C*****  GENERAL COMMENTS                                                P0370090
C*****    REAL SUBTRACTION ASSUMED WORKING                              P0370100
C*****  * VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0370110
C*****    VARIETY OF COMBINATIONS.                                      P0370120
C*****                                                                  P0370130
C*****  S P E C I F I C A T I O N S  SEGMENT 037                        P0370140
C*****                                                                  P0010840
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C*****  WHEN EXECUTING ONLY SEGMENT 037, THE SPECIFICATION STATEMENTS   P0010845
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0010850
C*****  1  AND  2  REMOVED.                                             P0010855
C*****                                                                  P0010860
C=    DIMENSION A2S(2,2),AC1S(25)                                       P0010865
      DIMENSION A2S(2,2),AC1S(25)                                       P037A1
C*****                                                                  P0010870
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0370150
C*****                                                                  P0070630
C*****  WHEN EXECUTING ONLY SEGMENT 037, THE FOLLOWING STATEMENT        P0070635
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070640
C*****                                                                  P0070645
C=    NUVI = 6                                                          P0070650
      NUVI = 6                                                          P037B1
C*****                                                                  P0070655
      WRITE (NUVI,370)                                                  P0370160
370   FORMAT (1H1,1X,33HARBMR - (037) REAL MULTIPLICATION//2X,          P0370170
     114HASA REF. - 6.1//2X,7HRESULTS)                                  P0370180
C*****    HEADER FOR SEGMENT 037 WRITTEN                                P0370190
      ACVS = 1.0                                                        P0370200
      BCVS = 0.2E2                                                      P0370210
      CCVS = -1.0                                                       P0370220
      DCVS = 0.0                                                        P0370230
      AC1S(1) = .5E+1                                                   P0370240
      HHDVS=ACVS*BCVS                                                   P0370250
      GGDVS=BCVS*BCVS*1.0                                               P0370260
      FFDVS=2.0*AC1S(1)*ACVS*ACVS                                       P0370270
      EEDVS=ACVS*BCVS*CCVS*DCVS*AC1S(1)                                 P0370280
      DDDVS=AC1S(1)*ACVS*BCVS*1.0E1*ACVS*ACVS                           P0370290
      CCDVS=CCVS*CCVS*CCVS*3.E0*ACVS*ACVS*ACVS                          P0370300
      A2S(1,1) = ACVS*CCVS*2.                                           P0370310
      HHDVS = HHDVS - 20.0                                              P0370320
      GGDVS = GGDVS - 400.0                                             P0370330
      FFDVS = FFDVS - 10.0                                              P0370340
      DDDVS = DDDVS - 1000.0                                            P0370350
      CCDVS = CCDVS + 3.0                                               P0370360
      A2S(1,1) = A2S(1,1) + 2.                                          P0370370
      WRITE (NUVI,371) HHDVS, GGDVS, FFDVS, EEDVS, DDDVS, CCDVS,        P0370380
     1                 A2S(1,1)                                         P0370390
371   FORMAT (//7(F11.1/)//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/      P0370400
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0370410
C*****    END OF TEST SEGMENT 037                                       P0370420
C*****  WHEN EXECUTING ONLY SEGMENT 037, THE STOP AND END CARDS         P0370430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0370440
C*****  1  AND  2  REMOVED.                                             P0370450
C=    STOP                                                              P0370460
C=    END                                                               P0370470
      STOP                                                              P037C1
      END                                                               P037C2
C***********************************************************************P0380010
C*****                                                                  P0380020
C*****                        ARFMD - (038)                             P0380030
C*****                                                                  P0380040
C***********************************************************************P0380050
C*****  GENERAL PURPOSE                                         ASA REF P0380060
C*****    TEST THAT EXPRESSIONS INVOLVING THE MULTIPLICATION      6.1   P0380070
C*****    OF DOUBLE PRECISION VALUES MAY BE FORMED                      P0380080
C*****  GENERAL COMMENTS                                                P0380090
C*****  * DP ADDITION AND SUBTRACTION ASSUMED WORKING.                  P0380100
C*****  * VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0380110
C*****    VARIETY OF COMBINATIONS.                                      P0380120
C*****                                                                  P0380130
C*****  S P E C I F I C A T I O N S  SEGMENT 038                        P0380140
C*****                                                                  P0010880
C*****  WHEN EXECUTING ONLY SEGMENT 038, THE SPECIFICATION STATEMENTS   P0010885
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0010890
C*****  1  AND  2  REMOVED.                                             P0010895
C*****                                                                  P0010900
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C=    DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,EEDVD,DDDVD,CCDVD            P0010905
C=   1,FFDVD, GGDVD,HHDVD,AC1D(10),BC2D(7,4), CC3D(7,2,2)               P0010910
      DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,EEDVD,DDDVD,CCDVD            P038A1
     1,FFDVD, GGDVD,HHDVD,AC1D(10),BC2D(7,4), CC3D(7,2,2)               P038A2
C*****                                                                  P0010915
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0380150
C*****                                                                  P0070660
C*****  WHEN EXECUTING ONLY SEGMENT 038, THE FOLLOWING STATEMENT        P0070665
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070670
C*****                                                                  P0070675
C=    NUVI = 6                                                          P0070680
      NUVI = 6                                                          P038B1
C*****                                                                  P0070685
      WRITE (NUVI,380)                                                  P0380160
380   FORMAT (1H1,1X,33HARFMD - (038) D.P. MULTIPLICATION//  2X,        P0380170
     -15H ASA REF. - 6.1//2X,7HRESULTS)                                 P0380180
C*****    HEADER FOR SEGMENT 038 WRITTEN                                P0380190
      ACVD=1.0D0                                                        P0380200
      BCVD=2.0                                                          P0380210
      CCVD=-30.0D-1                                                     P0380220
      DCVD=1.0D1                                                        P0380230
      AC1D(1) = 1.1D1                                                   P0380240
      CC3D(3,1,2) = .262144D6                                           P0380250
      CC3D(6,1,2) = -2000.D-3                                           P0380260
      CC3D(3,2,2) = 409.6D1                                             P0380270
      HHDVD=ACVD*BCVD                                                   P0380280
      GGDVD=ACVD*0.0D0*CCVD                                             P0380290
      FFDVD = AC1D(1)*ACVD*ACVD*ACVD                                    P0380300
      EEDVD=CCVD*CCVD*ACVD*1.0D0*BCVD                                   P0380310
      DDDVD=ACVD*2.0D1*ACVD*DCVD*1.0E0*CCVD                             P0380320
      CCDVD=ACVD*BCVD*CCVD*CCVD*CCVD*BCVD*ACVD                          P0380330
      BC2D(3,4) = DCVD*(400.D-2)*CC3D(6,1,2)                            P0380340
      BC2D(2,3) = CC3D(3,1,2) * CC3D(3,2,2)                             P0380350
      HHDVD = HHDVD - 2.0D0                                             P0380360
      FFDVD = FFDVD - 11.0D0                                            P0380370
      EEDVD = EEDVD - 18.0D0                                            P0380380
      DDDVD = DDDVD + 600.0D0                                           P0380390
      CCDVD = CCDVD + 108.0D0                                           P0380400
      BC2D(3,4) = BC2D(3,4) -(-80.D0)                                   P0380410
      BC2D(2,3) = BC2D(2,3) - 1.07374182D9                              P0380420
      WRITE (NUVI,381) HHDVD, GGDVD, FFDVD, EEDVD, DDDVD, CCDVD,        P0380430
     1                 BC2D(3,4) , BC2D(2,3)                            P0380440
381   FORMAT (//8(D22.10/)//35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/     P0380450
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0380460
C*****    END OF TEST SEGMENT 038                                       P0380470
C*****  WHEN EXECUTING ONLY SEGMENT 038, THE STOP AND END CARDS         P0380480
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0380490
C*****  1  AND  2  REMOVED.                                             P0380500
C=    STOP                                                              P0380510
C=    END                                                               P0380520
      STOP                                                              P038C1
      END                                                               P038C2
C***********************************************************************P0390010
C*****                                                                  P0390020
C*****                        ARBDV - (039)                             P0390030
C*****                                                                  P0390040
C***********************************************************************P0390050
C*****                                                                  P0390060
C*****  GENERAL PURPOSE                                         ASA REF P0390070
C*****    TEST BASIC DIVISION,                                  6.1     P0390080
C*****    INTEGER AND REAL (SP) TYPES ONLY                              P0390090
C*****                                                                  P0390100
C*****  S P E C I F I C A T I O N S  SEGMENT 039                        P0390110
C*****                                                                  P0010920
C*****  WHEN EXECUTING ONLY SEGMENT 039, THE SPECIFICATION STATEMENTS   P0010925
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0010930
C*****  1  AND  2  REMOVED.                                             P0010935
C*****                                                                  P0010940
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C=    DIMENSION A2S(2,2),IAC1I(5),IAC2I(2,7),AC1S(25)                   P0010945
      DIMENSION A2S(2,2),IAC1I(5),IAC2I(2,7),AC1S(25)                   P039A1
C*****                                                                  P0010950
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0390120
C*****                                                                  P0070690
C*****  WHEN EXECUTING ONLY SEGMENT 039, THE FOLLOWING STATEMENT        P0070695
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070700
C*****                                                                  P0070705
C=    NUVI = 6                                                          P0070710
      NUVI = 6                                                          P039B1
C*****                                                                  P0070715
      WRITE (NUVI,390)                                                  P0390130
390   FORMAT (1H1,1X,30HARBDV - (039) INTEGER AND REAL/15X,             P0390140
     -9H DIVISION//2X,14HASA REF. - 6.1/ /2X,7HRESULTS)                 P0390150
C*****    HEADER FOR SEGMENT 039 WRITTEN                                P0390160
      WRITE (NUVI,391)                                                  P0390170
391   FORMAT   (//2X,22HTEST1 INTEGER DIVISION)                         P0390180
      JACVI=1                                                           P0390190
      KBCVI=2                                                           P0390200
      LCCVI=0                                                           P0390210
      MDCVI=10                                                          P0390220
      IAC1I(2) = 1                                                      P0390230
      IAC2I(1,4) = -8                                                   P0390240
      IHDVI=KBCVI/JACVI                                                 P0390250
      IGDVI=MDCVI/KBCVI/JACVI                                           P0390260
      IFDVI=LCCVI/JACVI/JACVI/1                                         P0390270
      IEDVI = MDCVI/KBCVI/IAC1I(2)/IAC1I(2)/JACVI                       P0390280
      IAC2I(1,2)=IAC2I(1,4)/4/KBCVI                                     P0390290
      IHDVI = IHDVI - 2                                                 P0390300
      IGDVI = IGDVI - 5                                                 P0390310
      IEDVI = IEDVI - 5                                                 P0390320
      IAC2I(1,2) = IAC2I(1,2) + 1                                       P0390330
      WRITE (NUVI,392) IHDVI, IGDVI, IFDVI, IEDVI, IAC2I(1,2)           P0390340
392   FORMAT (//5(I10/))                                                P0390350
      WRITE (NUVI, 393)                                                 P0390360
393   FORMAT  (//2X,19HTEST2 REAL DIVISION)                             P0390370
      ACVS=1.0                                                          P0390380
      BCVS=0.0                                                          P0390390
      CCVS=1.0E1                                                        P0390400
      DCVS=20.0E-1                                                      P0390410
      AC1S(1)=100.0E-2                                                  P0390420
      A2S(1,1) = -200.E-2                                               P0390430
      HHDVS= ACVS/ACVS                                                  P0390440
      GGDVS = CCVS/ACVS/(-ACVS)                                         P0390450
      FFDVS= BCVS/CCVS/DCVS/ACVS                                        P0390460
      EEDVS= CCVS/AC1S(1)/DCVS/(-1.0)/ACVS                              P0390470
      A2S(1,2) = A2S(1,1)/AC1S(1)/ACVS/(-2.0E0)                         P0390480
      HHDVS = HHDVS - 1.0                                               P0390490
      GGDVS = GGDVS + 10.0                                              P0390500
      EEDVS = EEDVS + 5.0                                               P0390510
      A2S(1,2) = A2S(1,2) - 1.                                          P0390520
      WRITE (NUVI,394) HHDVS , GGDVS, FFDVS, EEDVS, A2S(1,2)            P0390530
394   FORMAT (//5(F11.1/)//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/      P0390540
     12X,29HTHIS SEGMENT TO BE SUCCESSFUL)                              P0390550
C*****    END OF TEST SEGMENT 039                                       P0390560
C*****  WHEN EXECUTING ONLY SEGMENT 039, THE STOP AND END CARDS         P0390570
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0390580
C*****  1  AND  2  REMOVED.                                             P0390590
C=    STOP                                                              P0390600
C=    END                                                               P0390610
      STOP                                                              P039C1
      END                                                               P039C2
C***********************************************************************P0400010
C*****                                                                  P0400020
C*****                        ARFDV - (040)                             P0400030
C*****                                                                  P0400040
C***********************************************************************P0400050
C*****  GENERAL PURPOSE                                          ASA REFP0400060
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C*****    TEST THAT EXPRESSIONS INVOLVING DIVISION OF DOUBLE     6.1   P0400070
C*****    PRECISION VALUES MAY BE FORMED                                P0400080
C*****  GENERAL COMMENTS                                                P0400090
C*****  * DP SUBTRACTION ASSUMED WORKING.                               P0400100
C*****  * VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0400110
C*****    VARIETY OF COMBINATIONS.                                      P0400120
C*****                                                                  P0400130
C*****  S P E C I F I C A T I O N S  SEGMENT 040                        P0400140
C*****                                                                  P0010960
C*****  WHEN EXECUTING ONLY SEGMENT 040, THE SPECIFICATION STATEMENTS   P0010965
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0010970
C*****  1  AND  2  REMOVED.                                             P0010975
C*****                                                                  P0010980
C=    DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,EEDVD,FFDVD,GGDVD,HHDVD      P0010985
C=   1,AC1D(10),BC2D(7,4),CC3D(7,2,2)                                   P0010990
      DOUBLE PRECISION ACVD,BCVD,CCVD,DCVD,EEDVD,FFDVD,GGDVD,HHDVD      P040A1
     1,AC1D(10),BC2D(7,4),CC3D(7,2,2)                                   P040A2
C*****                                                                  P0010995
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0400150
C*****                                                                  P0070720
C*****  WHEN EXECUTING ONLY SEGMENT 040, THE FOLLOWING STATEMENT        P0070725
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070730
C*****                                                                  P0070735
C=    NUVI = 6                                                          P0070740
      NUVI = 6                                                          P040B1
C*****                                                                  P0070745
      WRITE (NUVI,400)                                                  P0400160
  400 FORMAT (1H1,1X,27HARFDV - (040) D.P. DIVISION//                   P0400170
     -16H  ASA REF. - 6.1//2X,7HRESULTS)                                P0400180
C*****    HEADER FOR SEGMENT 040 WRITTEN                                P0400190
      ACVD = 1.0D0                                                      P0400200
      BCVD = 20.0D-1                                                    P0400210
      CCVD = .1D2                                                       P0400220
      DCVD = -10.0                                                      P0400230
      AC1D(1)= 0.0                                                      P0400240
      CC3D(1,2,2) = -.004D3                                             P0400250
      CC3D(1,1,2) = .244140625D-3                                       P0400260
      HHDVD  = BCVD/ACVD                                                P0400270
      CC3D(3,1,2) = .125D0                                              P0400280
      GGDVD  = DCVD/DCVD/ACVD                                           P0400290
      FFDVD  = AC1D(1)/BCVD/ACVD/1.D0/1.D0                              P0400300
      EEDVD = DCVD/BCVD/(-5.0E0)/ACVD/ACVD                              P0400310
      BC2D(4,4) = CC3D(1,2,2)/BCVD/DCVD/.002D2                          P0400320
      BC2D(4,3) = CC3D(1,1,2) / CC3D(3,1,2)                             P0400330
      HHDVD = HHDVD - 2.0D0                                             P0400340
      GGDVD = GGDVD - 1.0D0                                             P0400350
      EEDVD = EEDVD - 1.0D0                                             P0400360
      BC2D(4,4) = BC2D(4,4) - 1.0D0                                     P0400370
      BC2D(4,3) = BC2D(4,3) - 195.3125D-5                               P0400380
      WRITE (NUVI,401) HHDVD,GGDVD,FFDVD,EEDVD,BC2D(4,4) , BC2D(4,3)    P0400390
401   FORMAT (//6(D22.10/)//35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/     P0400400
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0400410
C*****    END OF TEST SEGMENT 040                                       P0400420
C*****  WHEN EXECUTING ONLY SEGMENT 040, THE STOP AND END CARDS         P0400430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0400440
C*****  1  AND  2  REMOVED.                                             P0400450
C=    STOP                                                              P0400460
C=    END                                                               P0400470
      STOP                                                              P040C1
      END                                                               P040C2
C***********************************************************************P0410010
C*****                                                                  P0410020
C*****                        ARBEX - (041)                             P0410030
C*****                                                                  P0410040
C***********************************************************************P0410050
C*****                                                                  P0410060
C*****  GENERAL PURPOSE                                         ASA REF P0410070
C*****    TEST THAT EXPRESSIONS INVOLVING INTEGER AND REAL       6.1   P0410080
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C*****    EXPONENTIATION MAY BE FORMED                                  P0410090
C*****  GENERAL COMMENTS                                                P0410100
C*****    THE FOLLOWING TESTS ARE MADE -                                P0410110
C*****    INTEGER BY INTEGER GIVING INTEGER                     6.1     P0410120
C*****    REAL (SP) BY INTEGER GIVING REAL (SP)                         P0410130
C*****    REAL (SP) BY REAL (SP) GIVING REAL (SP)                       P0410140
C*****  RESTRICTIONS OBSERVED                                           P0410150
C*****                                                                  P0410160
C*****  S P E C I F I C A T I O N S  SEGMENT 041                        P0410170
C*****                                                                  P0011000
C*****  WHEN EXECUTING ONLY SEGMENT 041, THE SPECIFICATION STATEMENTS  P0011005
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS        P0011010
C*****  1  AND  2  REMOVED.                                             P0011015
C*****                                                                  P0011020
C=    DIMENSION A2S(2,2),IAC1I(5),IAC2I(2,7),AC1S(25)                   P0011025
      DIMENSION A2S(2,2),IAC1I(5),IAC2I(2,7),AC1S(25)                   P041A1
C*****                                                                  P0011030
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0410180
C*****                                                                  P0070750
C*****  WHEN EXECUTING ONLY SEGMENT 041, THE FOLLOWING STATEMENT        P0070755
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070760
C*****                                                                  P0070765
C=    NUVI = 6                                                          P0070770
      NUVI = 6                                                          P041B1
C*****                                                                  P0070775
      WRITE (NUVI,410)                                                  P0410190
410   FORMAT (1H1,1X,34HARBEX - (041) BASIC EXPONENTIATION//            P0410200
     -  2X,15HASA REFS. - 6.1//2X, 7HRESULTS)                           P0410210
C*****    HEADER FOR SEGMENT 041 WRITTEN                                P0410220
      WRITE (NUVI,411)                                                  P0410230
411   FORMAT   (//2X,18HINTEGER BY INTEGER)                             P0410240
      JACVI=1                                                           P0410250
      KBCVI=0                                                           P0410260
      LCCVI=2                                                           P0410270
      MDCVI=-1                                                          P0410280
      IAC1I(2) = 3                                                      P0410290
      IAC2I(1,4) = 3                                                    P0410300
      IHDVI = LCCVI**IAC1I(2)                                           P0410310
      IGDVI=KBCVI**JACVI                                                P0410320
      IFDVI=JACVI**KBCVI                                                P0410330
      IEDVI = MDCVI**IAC1I(2)                                           P0410340
      IDDVI=(LCCVI**LCCVI)**(JACVI**MDCVI)                              P0410350
      IAC2I(1,2) = (LCCVI**IAC2I(1,4))**JACVI                           P0410360
      IHDVI = IHDVI - 8                                                 P0410370
      IFDVI = IFDVI - 1                                                 P0410380
      IEDVI = IEDVI + 1                                                 P0410390
      IDDVI = IDDVI- 4                                                  P0410400
      IAC2I(1,2) = IAC2I(1,2) - 8                                       P0410410
      WRITE (NUVI, 412) IHDVI, IGDVI, IFDVI, IEDVI, IAC2I(1,2)          P0410420
412   FORMAT (//6(I10/))                                                P0410430
      WRITE (NUVI, 413)                                                 P0410440
413   FORMAT  (//2X,25HREAL BY INT, REAL BY REAL)                       P0410450
      ACVS=1.0                                                          P0410460
      BCVS=0.0                                                          P0410470
      CCVS=0.5E0                                                        P0410480
      DCVS = 20.0E-1                                                    P0410490
      AC1S(1)=1.21E0                                                    P0410500
      A2S(1,1) = 300.E-2                                                P0410510
      HHDVS=ACVS**JACVI                                                 P0410520
      GGDVS=BCVS**JACVI                                                 P0410530
      FFDVS=DCVS**IAC1I(2)                                              P0410540
      EEDVS=ACVS**ACVS                                                  P0410550
      DDDVS=AC1S(1)**CCVS                                               P0410560
      CCDVS=(DCVS**1)**(2.0**ACVS)                                      P0410570
      A2S(2,1) = (A2S(1,1)**DCVS)**BCVS                                 P0410580
      HHDVS = HHDVS - 1.0                                               P0410590
      FFDVS = FFDVS - 8.0                                               P0410600
      EEDVS = EEDVS - 1.0                                               P0410610
      DDDVS = DDDVS - 1.1                                               P0410620
      CCDVS = CCDVS - 4.0                                               P0410630
      A2S(2,1) = A2S(2,1) - 1.0                                         P0410640
      WRITE (NUVI,414) HHDVS, GGDVS, FFDVS, EEDVS, DDDVS, CCDVS,A2S(2,1)P0410650
414   FORMAT (//7(F11.1/)//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOR/      P0410660
     12X, 29HTHIS SEGMENT TO BE SUCCESSFUL)                             P0410670
C*****    END OF TEST SEGMENT 041                                       P0410680
C*****  WHEN EXECUTING ONLY SEGMENT 041, THE STOP AND END CARDS        P0410690
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS      P0410700
C*****  1  AND  2  REMOVED.                                             P0410710
C=    STOP                                                              P0410720
C=    END                                                               P0410730
      STOP                                                              P041C1
      END                                                               P041C2
C***********************************************************************P0420010
C*****                                                                  P0420020
C*****                        ARFEX - (042)                             P0420030
C*****                                                                  P0420040
C***********************************************************************P0420050
C*****  GENERAL PURPOSE                                          ASA REFP0420060
C*****    TEST EXPONENTIATION OF DOUBLE PRECISION ITEMS           6.1   P0420070
C*****    THE FOLLOWING TYPES OF DP EXPONENTIATION ARE TESTED -         P0420080
C*****      DP BY REAL GIVING DP                                        P0420090
C*****      REAL BY DP GIVING DP                                        P0420100
C*****      DP BY DP GIVING DP                                          P0420110
C*****  GENERAL COMMENTS                                                P0420120
C*****  * DP ADDITION AND SUBTRACTION ASSUMED WORKING.                  P0420130
C*****  * VARIABLES, ARRAY ELEMENTS AND CONSTANTS ARE USED IN A         P0420140
C*****    VARIETY OF COMBINATIONS.                                      P0420150
C*****  RESTRICTION OBSERVED                                            P0420160
C*****    NEGATIVE VALUED ITEMS ARE NEVER RAISED TO A REAL OR     6.4/12P0420170
C*****    DP EXPONENT                                                   P0420180
C*****                                                                  P0420190
C*****  S P E C I F I C A T I O N S  SEGMENT 042                        P0420200
C*****                                                                  P0011040
C*****  WHEN EXECUTING ONLY SEGMENT 042, THE SPECIFICATION STATEMENTS  P0011045
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0011050
C*****  1  AND  2  REMOVED.                                             P0011055
C*****                                                                  P0011060
C=    DOUBLE PRECISION ACVD,BCVD,CCVD,EEDVD,FFDVD,GGDVD,HHDVD           P0011065
C=    DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2)                   P0011070
      DOUBLE PRECISION ACVD,BCVD,CCVD,EEDVD,FFDVD,GGDVD,HHDVD           P042A1
      DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2)                   P042A2
C*****                                                                  P0011075
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0420210
C*****                                                                  P0070780
C*****  WHEN EXECUTING ONLY SEGMENT 042, THE FOLLOWING STATEMENT        P0070785
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070790
C*****                                                                  P0070795
C=    NUVI = 6                                                          P0070800
      NUVI = 6                                                          P042B1
C*****                                                                  P0070805
      WRITE (NUVI,420)                                                  P0420220
420   FORMAT (1H1,1X,28HARFEX - (042) EXPONENTIATION//                  P0420230
     -16H  ASA REF. - 6.1//2X,7HRESULTS)                                P0420240
C*****    HEADER FOR SEGMENT 042 WRITTEN                                P0420250
C*****    DEFINE VARIABLES AND ARRAY ELEMENTS                           P0420260
      ACVS=1.0                                                          P0420270
      BCVS=0.0                                                          P0420280
      CCVS=0.5                                                          P0420290
      DCVS=20.0E-1                                                      P0420300
      ACVD = 1.0D0                                                      P0420310
      BCVD = 80.0D-1                                                    P0420320
      CCVD = 0.0                                                        P0420330
      AC1D(1) = 1.0                                                     P0420340
      BC2D(2,4) =  3000.D-3                                             P0420350
      HHDVD = ACVD**BCVS                                                P0420360
      GGDVD = ACVS**ACVD                                                P0420370
      FFDVD = AC1D(1)**BCVD                                             P0420380
      EEDVD = (DCVS**ACVD)** (2.0D0**ACVS)                              P0420390
      CC3D(5,1,2) = BC2D(2,4)**(DCVS**BCVS)                             P0420400
      HHDVD = HHDVD - 1.0D0                                             P0420410
      GGDVD = GGDVD - 1.0D0                                             P0420420
      FFDVD = FFDVD - 1.0D0                                             P0420430
      EEDVD = EEDVD - 4.0D0                                             P0420440
      CC3D(5,1,2) = CC3D(5,1,2) - 3.0D0                                 P0420450
      WRITE (NUVI,421) HHDVD, GGDVD, FFDVD, EEDVD, CC3D(5,1,2)          P0420460
421   FORMAT (//5(D22.10/)//35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/     P0420470
     1 32H  THIS SEGMENT TO BE SUCCESSFUL./36H  VALUES WITH EXPONENTS LEP0420480
     2SS THAN   /31H  10**(-14) ARE CONSIDERED ZERO)                    P0420490
C*****    END OF TEST SEGMENT 042                                       P0420500
C*****  WHEN EXECUTING ONLY SEGMENT 042, THE STOP AND END CARDS         P0420510
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0420520
C*****  1  AND  2  REMOVED.                                             P0420530
C=    STOP                                                              P0420540
C=    END                                                               P0420550
      STOP                                                              P042C1
      END                                                               P042C2
C***********************************************************************P0430010
C*****                                                                  P0430020
C*****                       ARBHI - (043)                              P0430030
C*****                                                                  P0430040
C***********************************************************************P0430050
C*****  GENERAL PURPOSE                                         ASA REF P0430060
C*****    TESTS THAT HIERARCHY OF OPERATORS AND PARENTHESES       6.1/07P0430070
C*****    ARE HANDLED CORRECTLY. OPERATORS SHOULD FOLLOW                P0430080
C*****    THIS ORDER - **          (EXPONENTIATION)               6.4/41P0430090
C*****                 * AND /    (MULTIPLICATION,DIVISION)             P0430100
C*****                 + AND -    (ADDITION,SUBTRACTION)                P0430110
C*****  GENERAL COMMENTS                                                P0430120
C*****  * ONLY INTEGER EXPRESSIONS ARE USED SINCE THIS TEST IS          P0430130
C*****    CONCENTRATING ON OPERATORS AND PARENTHESES                    P0430140
C*****  * ADDITION, SUBTRACTION, MULTIPLICATION, DIVISION,        6.4/49P0430150
C*****    EXPONENTIATION ASSUMED TO FOLLOW LAWS OF                      P0430160
C*****    ASSOCIATION AND COMMUTATION UNLESS PARENTHESES                P0430170
C*****    REGROUP EXPRESSIONS                                           P0430180
C*****  * INTEGER DIVISION MUST BE EVALUATED FROM LEFT TO         6.4/56P0430190
C*****    RIGHT                                                         P0430200
C*****  RESTRICTIONS OBSERVED                                           P0430210
C*****  * ALL ELEMENTS EVALUATED ARE MATHEMATICALLY DEFINED       6.4/16P0430220
C*****  * NO NEGATIVE VALUES ARE RAISED TO A REAL                 6.4/12P0430230
C*****    EXPONENT                                                      P0430240
C*****  * NO ZERO VALUED PRIMARY IS RAISED TO A ZERO              6.4/14P0430250
C*****    VALUED EXPONENT                                               P0430260
C*****                                                                  P0430270
C*****  S P E C I F I C A T I O N S  SEGMENT 043                        P0430280
C*****                                                                  P0011080
C*****  WHEN EXECUTING ONLY SEGMENT 043, THE SPECIFICATION STATEMENTS   P0011085
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0011090
C*****  1  AND  2  REMOVED.                                             P0011095
C*****                                                                  P0011100
C=    DIMENSION IAC1I(5),IAC2I(2,7)                                     P0011105
      DIMENSION IAC1I(5),IAC2I(2,7)                                     P043A1
C*****                                                                  P0011110
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0430290
C*****                                                                  P0070810
C*****  WHEN EXECUTING ONLY SEGMENT 043, THE FOLLOWING STATEMENT        P0070815
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070820
C*****                                                                  P0070825
C=    NUVI = 6                                                          P0070830
      NUVI = 6                                                          P043B1
C*****                                                                  P0070835
      WRITE   (NUVI,430)                                                P0430300
430   FORMAT (1H1,1X,36HARBHI - (043) HIERARCHY, PARENTHESES//2X,       P0430310
     1 23HASA REFS. - 6.1 AND 6.4//                                     P0430320
     2 2X, 7HRESULTS)                                                   P0430330
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      JACVI = 1                                                         P0430340
      KBCVI = 2                                                         P0430350
      LCCVI = -5                                                        P0430360
      MDCVI = 0                                                         P0430370
      NECVI = 36                                                        P0430380
      IAC1I(2) = 10                                                     P0430390
C*****    TEST THAT ADDITION IS COMMUTATIVE (TEST 1)                    P0430400
      MRRVI = 1                                                         P0430410
      IHDVI = JACVI + KBCVI                                             P0430420
      IGDVI = KBCVI + JACVI                                             P0430430
      IFDVI = IHDVI - IGDVI                                             P0430440
      WRITE (NUVI,431) MRRVI, IFDVI                                     P0430450
C*****    TEST THAT MULTIPLICATION IS COMMUTATIVE (TEST 2)              P0430460
      MRRVI = 2                                                         P0430470
      IHDVI = JACVI * KBCVI                                             P0430480
      IGDVI = KBCVI * JACVI                                             P0430490
      IFDVI = IHDVI - IGDVI                                             P0430500
      WRITE (NUVI,431) MRRVI, IFDVI                                     P0430510
C*****    TEST THAT SUBTRACTION IS COMMUTATIVE (TEST 3)                 P0430520
      MRRVI = 3                                                         P0430530
      IHDVI = KBCVI - JACVI                                             P0430540
      IGDVI = -JACVI + KBCVI                                            P0430550
      IFDVI = IHDVI - IGDVI                                             P0430560
      WRITE (NUVI,431) MRRVI, IFDVI                                     P0430570
C*****    TEST THAT ADDITION IS ASSOCIATIVE (TEST 4)                    P0430580
      MRRVI = 4                                                         P0430590
      IHDVI = (IAC1I(2) + JACVI) + KBCVI                                P0430600
      IGDVI = IAC1I(2) + (JACVI + KBCVI)                                P0430610
      IFDVI = IHDVI - IGDVI                                             P0430620
      WRITE (NUVI,431) MRRVI, IFDVI                                     P0430630
C*****    TEST THAT MULTIPLICATION IS ASSOCIATIVE (TEST 5)              P0430640
      MRRVI = 5                                                         P0430650
      IHDVI = (IAC1I(2) * LCCVI) * KBCVI                                P0430660
      IGDVI = IAC1I(2) * (LCCVI * KBCVI)                                P0430670
      IFDVI = IHDVI - IGDVI                                             P0430680
      WRITE (NUVI,431) MRRVI, IFDVI                                     P0430690
C*****    TEST THAT MULTIPLICATION IS DONE BEFORE ADDITION              P0430700
C*****    OR SUBTRACTION (TEST 6). ANSWER SHOULD BE ZERO                P0430710
      MRRVI = 6                                                         P0430720
      IHDVI = JACVI + KBCVI * LCCVI - 1 + IAC1I(2)                      P0430730
      WRITE (NUVI,431) MRRVI, IHDVI                                     P0430740
C*****    REGROUP TEST 6 EXPRESSION (SLIGHTLY CHANGED) WITH             P0430750
C*****    PARENTHESES.  ANSWERS SHOULD BE NON-ZERO (TEST7).             P0430760
      MRRVI = 7                                                         P0430770
      IGDVI = (JACVI + KBCVI) * LCCVI + 9                               P0430780
      IFDVI = JACVI + KBCVI * (LCCVI + 9)                               P0430790
      IEDVI = (JACVI + KBCVI) * (LCCVI + 9)                             P0430800
      IAC1I(1) = IGDVI + 6                                              P0430810
      IAC1I(3) = IFDVI - 9                                              P0430820
      IAC1I(4) = IEDVI - 12                                             P0430830
      WRITE (NUVI,432) MRRVI, IAC1I(1), IAC1I(3), IAC1I(4)              P0430840
C*****    TEST THAT DIVISION IS DONE BEFORE ADDITION                    P0430850
C*****    AND SUBTRACTION (TEST 8). ANSWER SHOULD BE ZERO.              P0430860
      MRRVI = 8                                                         P0430870
      LCCVI = - 6                                                       P0430880
      IAC1I(2) = 12                                                     P0430890
      IHDVI = LCCVI + IAC1I(2) / KBCVI - LCCVI - 6                      P0430900
      WRITE (NUVI,431) MRRVI, IHDVI                                     P0430910
C*****    REGROUP TEST 8 EXPRESSION WITH PARENTHESES (TEST 9). SECOND   P0430920
C*****    ANSWER SHOULD BE ZERO, OTHERS NON-ZERO.                       P0430930
      MRRVI = 9                                                         P0430940
      IGDVI = (LCCVI + IAC1I(2)) / KBCVI - LCCVI - 6                    P0430950
      IFDVI = LCCVI + IAC1I(2) / (KBCVI - LCCVI - 6)                    P0430960
      IEDVI = (LCCVI + IAC1I(2)) / (KBCVI - LCCVI - 6)                  P0430970
      IAC1I(1) = IGDVI - 3                                              P0430980
      IAC1I(4) = IEDVI - 3                                              P0430990
      WRITE (NUVI,432) MRRVI, IAC1I(1), IAC1I(3), IAC1I(4)              P0431000
C*****    TEST THAT EXPONENTIATION IS DONE BEFORE                       P0431010
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C*****    ANY OTHER OPERATION (TEST 10). ANSWERS SHOULD                 P0431020
C*****    BE ZERO.                                                      P0431030
      MRRVI = 10                                                        P0431040
      IHDVI = KBCVI + 3 ** 2 - 11                                       P0431050
      IGDVI = IAC1I(2) * KBCVI ** 3 - 96                                P0431060
      IFDVI = NECVI / LCCVI ** KBCVI - 1                                P0431070
      WRITE (NUVI,432) MRRVI, IHDVI, IGDVI, IFDVI                       P0431080
C*****    REGROUP TEST 10 EXPRESSIONS WITH PARENTHESES (TEST 11)        P0431090
C*****    ANSWERS SHOULD BE NON-ZERO                                    P0431100
      MRRVI = 11                                                        P0431110
      IHDVI = (KBCVI + 3) ** 2 - 11                                     P0431120
      IGDVI = (IAC1I(2) * KBCVI) ** 3 - 80                              P0431130
      IFDVI = (NECVI / LCCVI) ** KBCVI - 1                              P0431140
      IAC1I(1) = IHDVI - 14                                             P0431150
      IAC1I(3) = IGDVI - 13744                                          P0431160
      IAC1I(4) = IFDVI - 35                                             P0431170
      WRITE (NUVI,432) MRRVI, IAC1I(1), IAC1I(3), IAC1I(4)              P0431180
C*****    THE FOLLOWING STATEMENTS INCLUDE AN ADDITIONAL TEST           P0431190
C*****    OF OPERATOR HIERARCHY. A VARIETY OF OPERATORS IS USED         P0431200
C*****    BOTH VARIABLES AND ARRAY ELEMENTS ARE USED.  ALL              P0431210
C*****    ANSWERS SHOULD BE ZERO (TEST 12).                             P0431220
      MRRVI = 12                                                        P0431230
      LCCVI = -5                                                        P0431240
      IAC1I(2) = 10                                                     P0431250
      IEDVI = JACVI+KBCVI*LCCVI-IAC1I(2)/2-IAC1I(2)/2/5+15              P0431260
      IDDVI = KBCVI**3*4 + 162/(3**(KBCVI*2)) + MDCVI-34                P0431270
      IHDVI = KBCVI*(JACVI+KBCVI*(IAC1I(2)-KBCVI)) - 34                 P0431280
      IGDVI = IAC1I(2)/KBCVI+70/(LCCVI*(KBCVI**2+3))-3                  P0431290
      IFDVI = KBCVI*(KBCVI+IAC1I(2)*(KBCVI+3*(JACVI+KBCVI)))-224        P0431300
      IAC1I(1) = KBCVI*(KBCVI+KBCVI*(KBCVI+KBCVI*(KBCVI+KBCVI*          P0431310
     -(KBCVI+KBCVI)))) - 92                                             P0431320
      IAC2I(1,4) = IAC1I(2)+LCCVI+JACVI+KBCVI+KBCVI-JACVI-9             P0431330
      IAC2I(1,2) = IAC1I(2)/(LCCVI+JACVI+KBCVI)*(KBCVI**                P0431340
     1(KBCVI-JACVI))+10                                                 P0431350
      WRITE (NUVI,433) MRRVI, IEDVI, IDDVI, IHDVI, IGDVI, IFDVI,        P0431360
     1                 IAC1I(1),IAC2I(1,4),IAC2I(1,2)                   P0431370
C*****  EVALUATION MAY PROCEED ACCORDING TO ANY VALID FORMATION SEQUENCEP0431380
C*****  EVALUATION OF INTEGER TERM CONTAINING DIVISION                  P0431390
      MRRVI = 13                                                        P0431400
      NECVI = 7                                                         P0431410
      KBCVI = 2                                                         P0431420
      LCCVI = 4                                                         P0431430
      IGDVI = NECVI/KBCVI * LCCVI                                       P0431440
      IFDVI = LCCVI * NECVI / KBCVI                                     P0431450
      IAC1I(1) = IGDVI - 12                                             P0431460
      IAC1I(2) = IFDVI - 14                                             P0431470
      WRITE (NUVI,434) MRRVI,IAC1I(1), IAC1I(2)                         P0431480
C*****    FORMAT STATEMENTS FOR THIS SEGMENT                            P0431490
431   FORMAT ( /2X,4HTEST, I4, I6)                                      P0431500
432   FORMAT(/2X, 4HTEST, I4, I6/ I16/ I16)                             P0431510
433   FORMAT(/2X, 4HTEST,I4,I6/6(I16/),I16)                             P0431520
434   FORMAT(/2X,4HTEST,I4,I6/I16/2X,35H  THE ANSWERS ABOVE SHOULD BE 0 P0431530
     1FOR/31H  THIS SEGMENT TO BE SUCCESSFUL)                           P0431540
C*****    END OF TEST SEGMENT 043                                       P0431550
C*****  WHEN EXECUTING ONLY SEGMENT 043, THE STOP AND END CARDS         P0431560
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0431570
C*****  1  AND  2  REMOVED.                                             P0431580
C=    STOP                                                              P0431590
C=    END                                                               P0431600
      STOP                                                              P043C1
      END                                                               P043C2
C***********************************************************************P0500010
C******                                                                 P0500020
C******                     SBB67 - (050)                               P0500030
C******                                                                 P0500040
C***********************************************************************P0500050
C******  GENERAL PURPOSE                                         ASA REFP0500060
C******    TEST FORMATION OF SUBSCRIPTS FOR INTEGER              5.1.3.3P0500070
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C******    AND SINGLE PRECISION ARRAYS  IN FORM V,K FORMS              P0500080
C*****                                                                 P0500090
C*****  S P E C I F I C A T I O N S  SEGMENT 050                       P0500100
C*****                                                                 P0011120
C*****  WHEN EXECUTING ONLY SEGMENT 050, THE SPECIFICATION STATEMENTS  P0011125
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS        P0011130
C*****  1 AND  2  REMOVED.                                             P0011135
C*****                                                                 P0011140
C=    DIMENSION A3S(3,3,3)                                             P0011145
C=    DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6)                 P0011150
C=    INTEGER MCA3I(2,3,3)                                             P0011155
      DIMENSION A3S(3,3,3)                                             P050A1
      DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6)                 P050A2
      INTEGER MCA3I(2,3,3)                                             P050A3
C*****                                                                 P0011160
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0500110
C*****                                                                 P0070840
C*****  WHEN EXECUTING ONLY SEGMENT 050, THE FOLLOWING STATEMENT       P0070845
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.       P0070850
C*****                                                                 P0070855
C=    NUVI = 6                                                         P0070860
      NUVI = 6                                                         P050B1
C*****                                                                 P0070865
       WRITE (NUVI,501)                                                P0500120
501   FORMAT (1H1,1X,36HSBB67 - (050) SUBSCRIPTS FOR INTEGER/          P0500130
     -16X,21HAND REAL ARRAYS, V, K//2X,14HASA REF. 5.1.3//2X,          P0500140
     -7HRESULTS)                                                       P0500150
       IAC1I(5) = 3                                                    P0500160
       IAC2I(1,3)=4                                                    P0500170
      MCA3I(2,2,1) = -7                                                P0500180
       AC1S(20)=1.0                                                    P0500190
      AC2S(4,1)=-2.1E1                                                 P0500200
      A3S(1,2,2) = -22.0                                               P0500210
      JACVI = IAC1I(5) + IAC2I(1,3) + MCA3I(2,2,1)                     P0500220
      HHCVS = AC1S(20) - AC2S( 4,1) + A3S(1,2,2)                       P0500230
      WRITE (NUVI, 502) JACVI, HHCVS                                   P0500240
502   FORMAT (// I9//F11.1)                                            P0500250
504    JACVI=1                                                         P0500260
       ACVS=1.0                                                        P0500270
       IAC1I(JACVI)=10                                                 P0500280
       IAC2I(JACVI,3)=12                                               P0500290
      IAC2I(2,JACVI)=-6                                                P0500300
      MCA3I(JACVI,JACVI,3) = -1                                        P0500310
      MCA3I(2,JACVI,JACVI) = -1                                        P0500320
      MCA3I(JACVI,3,JACVI) = -2                                        P0500330
       AC1S(JACVI)=ACVS                                                P0500340
       AC2S(JACVI,2)=3.0                                               P0500350
       AC2S(5,JACVI)=60.0E-1                                           P0500360
      A3S(JACVI,JACVI,3) = +1.0                                        P0500370
      A3S(2,JACVI,JACVI) = +1.0                                        P0500380
      A3S(JACVI,3,JACVI) = +0.0                                        P0500390
      NECVI = IAC1I(1) - IAC2I(1,3) - IAC2I(2,1) + MCA3I(1,1,3) +      P0500400
     1        MCA3I(2,1,1) + MCA3I(1,3,1)                              P0500410
      MDCVI = IAC1I(JACVI) - IAC2I(JACVI,3) - IAC2I(2,JACVI) +         P0500420
     1        MCA3I(JACVI,JACVI,3) + MCA3I(2,JACVI,JACVI) +            P0500430
     2        MCA3I(JACVI,3,JACVI)                                     P0500440
      HHCVS = AC1S(1) + AC2S(1,2) - AC2S(5,1) + A3S(1,1,3) + A3S(2,1,1) P0500450
     1  + A3S(1,3,1)                                                   P0500460
      GGDVS = AC1S(JACVI) + AC2S(JACVI,2) - AC2S(5,JACVI) +            P0500470
     1        A3S(JACVI,JACVI,3) + A3S(2,JACVI,JACVI) +                P0500480
     2        A3S(JACVI,3,JACVI)                                       P0500490
      WRITE (NUVI,508) NECVI, MDCVI, HHCVS, GGDVS                      P0500500
508   FORMAT (// 2(I9/) / 2(F11.1/) / 35H  THE ANSWERS ABOVE SHOULD BE 0P0500510
     1 FOR/31H  THIS SEGMENT TO BE SUCCESSFUL)                         P0500520
C*****    END OF TEST SEGMENT 050                                      P0500530
C*****  WHEN EXECUTING ONLY SEGMENT 050, THE STOP AND END CARDS        P0500540
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS    P0500550
C*****  1  AND  2  REMOVED.                                            P0500560
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C=    STOP                                                              P0500570
C=    END                                                               P0500580
      STOP                                                              P050C1
      END                                                               P050C2
C***********************************************************************P0510010
C******                                                                 P0510020
C******                     SBB45 - (051)                               P0510030
C******                                                                 P0510040
C***********************************************************************P0510050
C******  GENERAL PURPOSE                                         ASA REFP0510060
C******    TEST FORMATION OF SUBSCRIPTS FOR INTEGER              5.1.3.3P0510070
C******    AND SINGLE PRECISION ARRAYS IN FORM V+K AND V-K              P0510080
C*****                                                                  P0510090
C*****  S P E C I F I C A T I O N S  SEGMENT 051                        P0510100
C*****                                                                  P0011170
C*****  WHEN EXECUTING ONLY SEGMENT 051, THE SPECIFICATION STATEMENTS  P0011175
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0011180
C*****  1  AND  2  REMOVED.                                             P0011185
C*****                                                                  P0011190
C=    DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),A3S(3,3,3)       P0011195
C=    INTEGER MCA3I(2,3,3)                                              P0011200
      DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6),A3S(3,3,3)       P051A1
      INTEGER MCA3I(2,3,3)                                              P051A2
C*****                                                                  P0011205
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0510110
C*****                                                                  P0070870
C*****  WHEN EXECUTING ONLY SEGMENT 051, THE FOLLOWING STATEMENT        P0070875
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070880
C*****                                                                  P0070885
C=    NUVI = 6                                                          P0070890
      NUVI = 6                                                          P051B1
C*****                                                                  P0070895
       WRITE (NUVI,511)                                                 P0510120
511   FORMAT (1H1,1X,36HSBB45 - (051) SUBSCRIPTS FOR INTEGER/           P0510130
     -16X,24HAND REAL ARRAYS,V+K, V-K//2X,16HASA REF. 5.1.3.3//2X,      P0510140
     -7HRESULTS)                                                        P0510150
       JACVI=4                                                          P0510160
       IAC1I(JACVI+1)=1                                                 P0510170
       IAC1I(JACVI-1)=2                                                 P0510180
      IAC2I(JACVI-2,1)=3                                                P0510190
       IAC2I(JACVI-2,2)=4                                               P0510200
       IAC2I(2,JACVI+  3 )=5                                            P0510210
       IAC2I(1,JACVI-0)=-3                                              P0510220
       AC1S(JACVI+1)=1.0                                                P0510230
      AC1S(JACVI-1)=2.0                                                 P0510240
       AC2S(JACVI+0,1)=3.0                                              P0510250
       AC2S(JACVI-2,2)=4.0                                              P0510260
      AC2S(2,JACVI+  2 )=5.0                                            P0510270
       AC2S(1,JACVI-0) = -3.0E0                                         P0510280
      NECVI=IAC1I(5)+IAC1I(3)+IAC2I(2,1)+IAC2I(2,2)                     P0510290
     -+IAC2I(2,7)+IAC2I(1,4)-12                                         P0510300
      KBCVI = IAC1I(JACVI+1) + IAC1I(JACVI-1) + IAC2I(JACVI-2,1) +      P0510310
     1        IAC2I(JACVI-2,2) + IAC2I(1,JACVI-0) + IAC2I(2,JACVI+3) -12P0510320
      HHCVS = AC1S(5) + AC1S(3) + AC2S(4,1) + AC2S(2,2) + AC2S(2,6) +   P0510330
     1        AC2S(1,4) - 12.0                                          P0510340
      GGDVS = AC1S(JACVI+1) + AC1S(JACVI-1) + AC2S(JACVI+0,1) +         P0510350
     1        AC2S(JACVI-2,2) + AC2S(2,JACVI+2) + AC2S(1,JACVI-0) - 12.0P0510360
      JACVI = 2                                                         P0510370
      MCA3I(JACVI,JACVI+1,1)  =  12                                     P0510380
      MCA3I(1,JACVI+1,3) = -4                                           P0510390
      MCA3I(1,2,JACVI+0) = +2                                           P0510400
      MCA3I(JACVI-1,1,JACVI-1) = -6                                     P0510410
      MCA3I(JACVI,JACVI-0,2) = 15                                       P0510420
      MCA3I(2,JACVI-1,JACVI-1) = -11                                    P0510430
      MCA3I(JACVI-0,JACVI+1,JACVI+0) = -8                               P0510440
      MCA3I(JACVI,JACVI+1,JACVI+1) = MCA3I(JACVI,JACVI+1,1) +           P0510450
     1        MCA3I(1,JACVI+1,3) + MCA3I(1,2,JACVI+0) +                 P0510460
     2        MCA3I(JACVI-1,1,JACVI-1) + MCA3I(JACVI,JACVI-0,2) +       P0510470
     3        MCA3I(2,JACVI-1,JACVI-1) + MCA3I(JACVI-0,JACVI+1,JACVI+0) P0510480
      A3S(JACVI+1,1,1) = 12.0                                           P0510490
      A3S(1,JACVI+1,3) = -4.0                                           P0510500
      A3S(1,2,JACVI+0) = +2.0                                           P0510510
      A3S(JACVI-1,1,JACVI-1) = -6.0                                     P0510520
      A3S(JACVI+1,JACVI-0,2) = 15.0                                     P0510530
      A3S(2,JACVI-1,JACVI-1) = -11.0                                    P0510540
      A3S(JACVI-0,JACVI+1,JACVI+0) = -8.0                               P0510550
      A3S(JACVI+1,JACVI+1,JACVI+1) = A3S(JACVI+1,1,1) +                 P0510560
     1        A3S(1,JACVI+1,3) + A3S(1,2,JACVI+0) +                     P0510570
     2        A3S(JACVI-1,1,JACVI-1) + A3S(JACVI+1,JACVI-0,2) +         P0510580
     3        A3S(2,JACVI-1,JACVI-1) + A3S(JACVI-0,JACVI+1,JACVI+0)     P0510590
      WRITE (NUVI,515) NECVI,KBCVI,MCA3I(2,3,3),HHCVS,GGDVS,A3S(3,3,3) P0510600
515   FORMAT (//3(I9/)/3(F11.1/)/35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/P0510610
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0510620
C*****    END OF TEST SEGMENT 051                                       P0510630
C*****  WHEN EXECUTING ONLY SEGMENT 051, THE STOP AND END CARDS         P0510640
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS    P0510650
C*****  1  AND  2  REMOVED.                                             P0510660
C=    STOP                                                              P0510670
C=    END                                                               P0510680
      STOP                                                              P051C1
      END                                                               P051C2
C***********************************************************************P0520010
C*****                                                                  P0520020
C*****                      SBB13 - (052)                               P0520030
C*****                                                                  P0520040
C***********************************************************************P0520050
C*****  GENERAL PURPOSE                                         ASA REFSP0520060
C*****    TEST FORMATION OF SUBSCRIPTS FOR INTEGER               5.1.3.3P0520070
C*****    AND SINGLE PRECISION ARRAYS                                   P0520080
C*****    FORM C*V, C*V-K, C*V+K                                        P0520090
C*****                                                                  P0520100
C*****  S P E C I F I C A T I O N S  SEGMENT 052                        P0520110
C*****                                                                  P0011210
C*****  WHEN EXECUTING ONLY SEGMENT 052, THE SPECIFICATION STATEMENTS   P0011215
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS        P0011220
C*****  1  AND  2  REMOVED.                                             P0011225
C*****                                                                  P0011230
C=    DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),A3S(3,3,3),AC2S(5,6)       P0011235
C=    INTEGER MCA3I(2,3,3)                                              P0011240
      DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),A3S(3,3,3),AC2S(5,6)       P052A1
      INTEGER MCA3I(2,3,3)                                              P052A2
C*****                                                                  P0011245
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0520120
C*****                                                                  P0070900
C*****  WHEN EXECUTING ONLY SEGMENT 052, THE FOLLOWING STATEMENT        P0070905
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070910
C*****                                                                  P0070915
C=    NUVI = 6                                                          P0070920
      NUVI = 6                                                          P052B1
C*****                                                                  P0070925
      WRITE (NUVI,520)                                                  P0520130
520   FORMAT (1H1,1X,36HSBB13 - (052) SUBSCRIPTS INTEGER AND/           P0520140
     -16X,23HREAL, C*V, C*V-K, C*V+K//2X,16HASA REF. 5,1.3.3//2X,       P0520150
     -7HRESULTS)                                                        P0520160
      JACVI=2                                                           P0520170
      KACVI= 1                                                          P0520180
      LCCVI = -2                                                        P0520190
      IAC1I(2*JACVI)=1                                                  P0520200
      IAC2I(1*JACVI,1)=2                                                P0520210
      IAC2I(1,3*KACVI)=3                                                P0520220
      AC1S(2*JACVI)=1.0                                                 P0520230
      AC2S(1*JACVI,1)=2.0                                               P0520240
      AC2S(3, 3*KACVI)=30.E-1                                           P0520250
      MDCVI = IAC1I(2*JACVI) + IAC2I(1*JACVI,1) + IAC2I(1,3*KACVI) - 6  P0520260
      NECVI=IAC1I(4) +IAC2I(2,1) +IAC2I(1,3) - 6                        P0520270
      GGDVS = AC1S(2*JACVI) + AC2S(1*JACVI,1) + AC2S(3,3*KACVI) - 6.0   P0520280
      HHCVS = AC1S(4) + AC2S(2,1) + AC2S(3,3) - 6.0                     P0520290
      WRITE (NUVI,524) MDCVI, NECVI, GGDVS, HHCVS                       P0520300
524   FORMAT  (//2(I9/)/2(F11.1/))                                      P0520310
      IAC1I(2*JACVI+1) = -6                                             P0520320
      IAC1I(1*JACVI-1)=-4                                               P0520330
      IAC2I(1*JACVI-1,2)=3                                              P0520340
      IAC2I(2*JACVI-3,1)=4                                              P0520350
      IAC2I(2,1*JACVI+4)=2                                              P0520360
      IAC2I(1,3*JACVI-2)=1                                              P0520370
      AC1S(2*LCCVI+9) = -6.0                                            P0520380
      AC1S(1*LCCVI+3) = -4.0                                            P0520390
      AC2S(1*LCCVI+3,2) = 3.0                                           P0520400
      AC2S(2*JACVI+0,3)=4.0                                             P0520410
      AC2S(3,1*JACVI+3)=2.0                                             P0520420
      AC2S(3,3*JACVI-2)=1.0                                             P0520430
      MDCVI = IAC1I(2*JACVI+1) + IAC1I(1*JACVI-1) + IAC2I(1*JACVI-1,2) +P0520440
     1        IAC2I(1*KACVI+0,1) + IAC2I(2,2*JACVI+2) +                 P0520450
     2        IAC2I(1,3*JACVI-2)                                        P0520460
      NECVI = IAC1I(5) + IAC1I(1) + IAC2I(1,2)                          P0520470
     -+ IAC2I(1,1) + IAC2I(2,6) + IAC2I(1,4)                            P0520480
      GGDVS = AC1S(2*JACVI+1) + AC1S(1*JACVI-1) + AC2S(1*JACVI-1,2) +   P0520490
     1        AC2S(2*JACVI+0,3) + AC2S(3,1*JACVI+3) + AC2S(3,3*JACVI-2) P0520500
      HHCVS = AC1S(5) + AC1S(1) + AC2S(1,2)                             P0520510
     -+ AC2S(4,3) + AC2S(3,5) + AC2S(3,4)                               P0520520
      WRITE (NUVI,524) MDCVI, NECVI, GGDVS, HHCVS                       P0520530
      MCA3I(2*KACVI,1,1) = -1                                           P0520540
      MCA3I(2,2*KACVI,2) = -2                                           P0520550
      MCA3I(1,1,1*KACVI) = -3                                           P0520560
      MCA3I(1*KACVI+1,2,3) = 1                                          P0520570
      MCA3I(2,1*KACVI+2,2) = 2                                          P0520580
      MCA3I(1,2,3*KACVI+0) = 3                                          P0520590
      MCA3I(4*KACVI-2,1,3) = 40                                         P0520600
      MCA3I(1,6*KACVI-3,2) = 5                                          P0520610
      MCA3I(2,3,10*KACVI-9) = -40                                       P0520620
      MCA3I(2*KACVI,5*KACVI-4,2*KACVI+0)= -5                            P0520630
      MCA3I(1*KACVI-0,3,2*KACVI+1) = MCA3I(2*KACVI,1,1) +               P0520640
     1    MCA3I(2,2*KACVI,2) + MCA3I(1,1,1*KACVI) + MCA3I(1*KACVI+1,2,3)P0520650
     2  + MCA3I(2,1*KACVI+2,2) + MCA3I(1,2,3*KACVI+0)                   P0520660
     3  + MCA3I(4*KACVI-2,1,3) + MCA3I(1,6*KACVI-3,2)                   P0520670
     4  + MCA3I(2,3,10*KACVI-9) + MCA3I(2*KACVI,5*KACVI-4,2*KACVI+0)    P0520680
      A3S(3*KACVI,1,1) = -1.0                                           P0520690
      A3S(2,2*KACVI,2) = -2.0                                           P0520700
      A3S(1,1,1*KACVI) = -3.0                                           P0520710
      A3S(2*KACVI+1,2,3) = 1.0                                          P0520720
      A3S(3,1*KACVI+2,2) = 2.0                                          P0520730
      A3S(1,2,3*KACVI+0) = 3.0                                          P0520740
      A3S(4*KACVI-2,1,3) = 40.0                                         P0520750
      A3S(1,6*KACVI-3,2) = 5.0                                          P0520760
      A3S(2,3,10*KACVI-8) = -40.0                                       P0520770
      A3S(3*KACVI,5*KACVI-4,2*KACVI+0) = -5.0                           P0520780
      A3S(1*KACVI-0,3,2*KACVI+1) = A3S(3*KACVI,1,1) + A3S(2,2*KACVI,2) +P0520790
     1    A3S(1,1,1*KACVI) + A3S(2*KACVI+1,2,3) + A3S(3,1*KACVI+2,2) +  P0520800
     2    A3S(1,2,3*KACVI+0) + A3S(4*KACVI-2,1,3) + A3S(1,6*KACVI-3,2) +P0520810
     3    A3S(2,3,10*KACVI-8) + A3S(3*KACVI,5*KACVI-4,2*KACVI+0)        P0520820
      WRITE (NUVI,525) MCA3I(1,3,3), A3S(1,3,3)                         P0520830
525   FORMAT (//I9 // F11.1 )                                           P0520840
      WRITE (NUVI,527)                                                  P0520850
527   FORMAT (// 35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/                P0520860
     1  31H  THIS SEGMENT TO BE SUCCESSFUL)                             P0520870
C*****    END OF TEST SEGMENT 052                                       P0520880
C*****  WHEN EXECUTING ONLY SEGMENT 052, THE STOP AND END CARDS        P0520890
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS    P0520900
C*****  1  AND  2  REMOVED.                                             P0520910
C=    STOP                                                              P0520920
C=    END                                                               P0520930
      STOP                                                              P052C1
      END                                                               P052C2
C***********************************************************************P0530010
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C*****                                                                  P0530020
C*****                      SBF17 - (053)                               P0530030
C*****                                                                  P0530040
C***********************************************************************P0530050
C*****                                                                  P0530060
C*****    GENERAL PURPOSE                                       ASA REF P0530070
C*****      TEST FORMATION OF SUBSCRIPTS FOR DOUBLE PRECISION   5.1.3.3 P0530080
C*****      ARRAYS                                                      P0530090
C*****      FORMS V, K, C*V,      C*V-K, C*V+K, V+K, V-K                P0530100
C*****                                                                  P0530110
C*****  S P E C I F I C A T I O N S  SEGMENT 053                        P0530120
C*****                                                                  P0011250
C*****  WHEN EXECUTING ONLY SEGMENT 053, THE SPECIFICATION STATEMENTS   P0011255
C*****  WHICH APPEAR AS COMMENTS, MUST HAVE THE  C=  IN COLUMNS         P0011260
C*****  1  AND  2  REMOVED.                                             P0011265
C*****                                                                  P0011270
C=    DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2),EP1D(43),         P0011275
C=   1                 VTAVD, WTAVD, AADVD                              P0011280
      DOUBLE PRECISION AC1D(10),BC2D(7,4),CC3D(7,2,2),EP1D(43),         P053A1
     1                 VTAVD, WTAVD, AADVD                              P053A2
C*****                                                                  P0011285
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0530130
C*****                                                                  P0070930
C*****  WHEN EXECUTING ONLY SEGMENT 053, THE FOLLOWING STATEMENT        P0070935
C*****  NUVI = 6  MUST HAVE THE  C=  IN COLUMNS 1 AND 2 REMOVED.        P0070940
C*****                                                                  P0070945
C=    NUVI = 6                                                          P0070950
      NUVI = 6                                                          P053B1
C*****                                                                  P0070955
      WRITE (NUVI,530)                                                  P0530140
530   FORMAT (1H1,1X,33HSBF17 - (053) SUBSCRIPTS FOR D.P./              P0530150
     -16X,17HARRAYS, ALL FORMS//2X,18HASA REF. - 5.1.3.3//2X,7HRESULTS) P0530160
      NACVI = 10                                                        P0530170
      JACVI=1                                                           P0530180
      KACVI=+2                                                          P0530190
      LCCVI = -1                                                        P0530200
      EP1D(10)=1.00                                                     P0530210
      BC2D(6,3)=4.0D0                                                   P0530220
      CC3D(4,1,1)=-60.0D-1                                              P0530230
      AC1D(JACVI)=30.0D-1                                               P0530240
      BC2D(JACVI,3)=1.0D0                                               P0530250
      CC3D(JACVI,1,1)=2.0D0                                             P0530260
      BC2D(3,JACVI)=5.0D0                                               P0530270
      CC3D(2,JACVI,1)=-2.0D0                                            P0530280
      CC3D(3,2,JACVI)=.4D1                                              P0530290
      VTAVD = EP1D(10) + BC2D(6,3) + CC3D(4,1,1) + AC1D(1)              P0530300
     -+BC2D(1,3) + CC3D(1,1,1) + BC2D(3,1) + CC3D(2,1,1)                P0530310
     -+CC3D(3,2,1) - 12.0D0                                             P0530320
      AADVD = EP1D(10) + AC1D(JACVI) + BC2D(JACVI,3) + BC2D(6,3) +      P0530330
     1        CC3D(4,1,1) + CC3D(JACVI,1,1) + BC2D(3,JACVI) +           P0530340
     2        CC3D(2,JACVI,1) + CC3D(3,2,JACVI) - 12.0D0                P0530350
      AC1D(3*JACVI)=-0.6D+1                                             P0530360
      AC1D(3*JACVI-2)=70.0D-1                                           P0530370
      AC1D(5*JACVI+3) = 1.0D0                                           P0530380
      AC1D (JACVI+3) = 1.0D0                                            P0530390
      AC1D (NACVI-3) = -1.0D0                                           P0530400
      BC2D(6*JACVI,2*KACVI-1) =2.0D0                                    P0530410
      BC2D(8*JACVI-2,1*LCCVI+5) = 10.0D0                                P0530420
      CC3D (3*JACVI,2,4*KACVI-6) = -8.0D0                               P0530430
      CC3D(10*JACVI-3,1,1*LCCVI+3) = -6.0D0                             P0530440
      WTAVD = AC1D(3) + AC1D(1) + AC1D(8) + BC2D(6,3) +                 P0530450
     -BC2D(6,4) + CC3D(3,2,2) + CC3D(7,1,2) + AC1D(4) + AC1D(7)         P0530460
      CC3D(2*KACVI+1,NACVI-8,2*JACVI) = AC1D(3*JACVI) +                 P0530470
     1        AC1D(3*JACVI-2) + AC1D(5*JACVI+3) + AC1D(JACVI+3) +       P0530480
     2        AC1D(NACVI-3) + BC2D(6*JACVI,2*KACVI-1) +                 P0530490
     3        BC2D(8*JACVI-2,1*JACVI+3) + CC3D(3*JACVI,2,4*KACVI-6 ) +  P0530500
     4        CC3D(10*JACVI-3,1,1*JACVI+1)                              P0530510
      WRITE (NUVI,531) VTAVD, WTAVD, AADVD, CC3D(5,2,2)                 P0530520
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531   FORMAT (//4(D18.5/)/ 35H  THE ANSWERS ABOVE SHOULD BE 0 FOR/      P0530530
     1 31H  THIS SEGMENT TO BE SUCCESSFUL)                              P0530540
C*****    END OF TEST SEGMENT 053                                       P0530550
C*****  WHEN EXECUTING ONLY SEGMENT 053, THE STOP AND END CARDS         P0530560
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=  IN COLUMNS     P0530570
C*****  1  AND  2  REMOVED.                                             P0530580
C=    STOP                                                              P0530590
C=    END                                                               P0530600
      STOP                                                              P053C1
      END                                                               P053C2
C***********************************************************************P0540010
C*****                                                                  P0540020
C*****                       SIMIF - (054)                              P0540030
C*****                                                                  P0540040
C***********************************************************************P0540050
C*****  GENERAL PURPOSE                                         ASA REFSP0540060
C*****    TO TEST ARITHMETIC IF STATEMENT                       7.1.2.2 P0540070
C*****    AND LOGICAL IF FOLLOWED BY GO TO                      7.1.2.3 P0540080
C*****    SO THAT THESE STATEMENTS MAY BE USED                  4.2     P0540090
C*****    IN SUBSEQUENT TEST SEGMENTS.                                  P0540100
C*****                                                                  P0540110
C*****    ARITHMETIC EXPRESSIONS ARE -                                  P0540120
C*****    INTEGER VARIABLE                                              P0540130
C*****    INTEGER VARIABLE + OR - A CONSTANT                            P0540140
C*****    LOGICAL EXPRESSIONS ARE -                                     P0540150
C*****    LOGICAL VARIABLE                                              P0540160
C*****    .NOT. LOGICAL VARIABLE                                        P0540170
C*****                                                                  P0540180
C*****  S P E C I F I C A T I O N S  SEGMENT 054                        P0540190
C*****                                                                  P0011290
C*****  WHEN EXECUTING ONLY SEGMENT 054, THE SPECIFICATION STATEMENTS   P0011295
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011300
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011305
C*****                                                                  P0011310
C=    LOGICAL LVB, L1B(10), LNVB                                        P0011315
      LOGICAL LVB, L1B(10), LNVB                                        P054A1
C*****                                                                  P0011320
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0540200
C*****  WHEN EXECUTING ONLY SEGMENT 054, THE FOLLOWING STATEMENT        P0070960
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0070965
C*****                                                                  P0070970
C=    NUVI = 6                                                          P0070975
      NUVI = 6                                                          P054B1
      WRITE(NUVI,7540)                                                  P0540210
      IVI = -8                                                          P0540220
      JVI = 0                                                           P0540230
      KVI = 2                                                           P0540240
      MVI = -4                                                          P0540250
      LVB = .TRUE.                                                      P0540260
      LNVB = .FALSE.                                                    P0540270
C*****  LOGICAL ARRAY L1B SHOULD CONTAIN ALL .TRUE. IF TEST IS CORRECT. P0540280
      NVI = 1                                                           P0540290
      IF (IVI) 541, 542, 542                                            P0540300
  544 IF (JVI) 542, 541, 542                                            P0540310
  545 IF (KVI) 542,542, 541                                             P0540320
C*****  ZERO IS NEITHER POSITIVE NOR NEGATIVE                           P0540330
  546 NAVI = IVI * JVI                                                  P0540340
      IF (NAVI) 542, 541, 542                                           P0540350
  547 NAVI = JVI * MVI                                                  P0540360
      IF (NAVI) 542, 541, 542                                           P0540370
  548 NAVI = JVI / MVI                                                  P0540380
      IF (NAVI) 542, 541, 542                                           P0540390
  549 IF (MVI + 4) 542, 541, 542                                        P0540400
 7543 IF (KVI - 2) 542, 541, 542                                        P0540410
C*****  LOGICAL IF FOLLOWED BY GO TO                                    P0540420
 7544 IF (LVB) GO TO 541                                                P0540430
      GO TO 542                                                         P0540440
 7545 IF (.NOT.LNVB) GO TO 541                                          P0540450
 542  L1B(NVI) = .FALSE.                                               P0540460
      GO TO 543                                                         P0540470
  541 L1B(NVI) = .TRUE.                                                 P0540480
  543 NVI = NVI + 1                                                     P0540490
      GO TO (544,544,545,546,547,548,549,7543,7544,7545,7546), NVI      P0540500
 7546 WRITE (NUVI,7541) L1B                                             P0540510
      WRITE (NUVI,7542)                                                 P0540520
 7540 FORMAT (2H1 ,30HSIMIF - (054) SIMPLE ARITH. IF/19X,14HANO LOGICAL P0540530
     -IF//20H  ASA REF. - 7.1.2.2/ 13X, 7H7.1.2.3 //9H  RESULTS)        P0540540
7541  FORMAT (/L4)                                                      P0540550
 7542 FORMAT  (/36H  THE TEN ANSWERS ABOVE MUST BE TRUE)                P0540560
C*****  ENO OF TEST SEGMENT 054                                         P0540570
C*****  WHEN EXECUTING ONLY SEGMENT 054, THE STOP AND END CARDS         P0540580
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0540590
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0540600
C=    STOP                                                              P0540610
C=    ENO                                                               P0540620
      STOP                                                              P054C1
      END                                                               P054C2
C***********************************************************************P0550010
C*****                                                                  P0550020
C*****                       IFABS - (055)                              P0550030
C*****                                                                  P0550040
C***********************************************************************P0550050
C*****  GENERAL PURPOSE                                         ASA REF P0550060
C*****    TEST INTRINSIC FUNCTION ABS,IABS (ABSOLUTE VALUE)       8.2   P0550070
C*****                                                                  P0550080
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0550090
C*****                                                                  P0070980
C*****  WHEN EXECUTING ONLY SEGMENT 055, THE FOLLOWING STATEMENT        P0070985
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVED.          P0070990
C*****                                                                  P0070995
C=    NUVI = 6                                                          P0071000
      NUVI = 6                                                          P055B1
C*****                                                                  P0071005
      WRITE(NUVI,0550)                                                  P0550100
0550  FORMAT(37H1 IFABS - (055) INTRINSIC FUNCTIONS--/10X,26HABS, IABS (P0550110
     1ABSOLUTE VALUE)//17H  ASA REFS. - 8.2//9H  RESULTS)               P0550120
C*****    HEAOER FOR SEGMENT 055 WRITTEN                                P0550130
C*****    SINGLE PRECISION REAL ARGUMENT                                P0550140
      MCGVI = 1                                                         P0550150
      CMAVS = 1.000789                                                  P0550160
      CMBVS = -0.2E2                                                    P0550170
      CMCVS = -2.0                                                      P0550180
      CMOVS =  2.0                                                      P0550190
      CMFVS = -4.0                                                      P0550200
      CMEVS = ABS(CMAVS)                                                P0550210
      CMEVS = CMEVS - 1.000789                                          P0550220
      WRITE (NUVI,0557) CMEVS                                           P0550230
      CMBVS = ABS(CMBVS)                                                P0550240
      CMEVS = CMBVS - 0.2E2                                             P0550250
      WRITE (NUVI,0557) CMEVS                                           P0550260
      CMEVS = 2.0*CMCVS+ABS(2.0*CMFVS+ABS(CMCVS*CMOVS**MCGVI))          P0550270
      WRITE (NUVI,0557) CMEVS                                           P0550280
      CMEVS = CMFVS+CMDVS+ABS(CMCVS+ABS(CMFVS)-ABS(CMOVS-CMCVS))        P0550290
      WRITE (NUVI,0557) CMEVS                                           P0550300
0557  FORMAT  (/2X,F15.1)                                               P0550310
0558  FORMAT  (/2X,37HTHE ABOVE ANSWERS SHOULO ALL BE 0 FOR/2X,         P0550320
     1 35HTHIS TEST SEGMENT TO BE SUCCESSFUL.)                          P0550330
C*****    INTEGER ARGUMENT                                              P0550340
      MCAVI = 25                                                        P0550350
      MCBVI = 4                                                         P0550360
      MCCVI = -129                                                      P0550370
      MCDVI = -2                                                        P0550380
      MCEVI = 2                                                         P0550390
      MCFVI = IABS(MCAVI)                                               P0550400
      MCFVI = MCFVI -25                                                 P0550410
      WRITE (NUVI,0551) MCFVI                                           P0550420
      MCFVI = IABS(MCDVI+IABS(MCBVI/MCDVI)-IABS(MCEVI**2))-MCBVI        P0550430
      WRITE (NUVI,0551) MCFVI                                           P0550440
      MCCVI = IABS(MCCVI)                                               P0550450
      MCFVI = MCCVI - 129                                               P0550460
      WRITE (NUVI,0551) MCFVI                                           P0550470
0551  FORMAT  (/10X,I5)                                                 P0550480
      WRITE (NUVI,0558)                                                 P0550490
C*****    END OF TEST SEGMENT 055                                       P0550500
C*****  WHEN EXECUTING ONLY SEGMENT 055, THE  STOP  AND  END  CARDS     P0550510
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0550520
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0550530
C=    STOP                                                              P0550540
C=    END                                                               P0550550
      STOP                                                              P055C1
      END                                                               P055C2
C***********************************************************************P0560010
C*****                                                                  P0560020
C*****                       IFFLT - (056)                              P0560030
C*****                                                                  P0560040
C***********************************************************************P0560050
C*****  GENERAL PURPOSE                                         ASA REF P0560060
C*****    TEST INTRINSIC FUNCTION FLOAT (CONVERSION FROM          8.2   P0560070
C*****    INTEGER TO REAL)                                     (TABLE 3)P0560080
C*****                                                                  P0560090
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0560100
C*****                                                                  P0071010
C*****  WHEN EXECUTING ONLY SEGMENT 056, THE FOLLOWING STATEMENT        P0071015
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071020
C*****                                                                  P0071025
C=    NUVI = 6                                                          P0071030
      NUVI = 6                                                          P056B1
C*****                                                                  P0071035
      WRITE (NUVI,0560)                                                 P0560110
0560  FORMAT  (1H1,1X,34HIFFLT - (056) INTRINSIC FUNCTION--/16X,        P0560120
     15HFLOAT/ 2X,14HASA REF. - 8.2/2X,7HRESULTS)                       P0560130
C*****    HEADER FOR SEGMENT 056                                        P0560140
C*****    ARGUMENT IS INTEGER, FUNCTION IS REAL                         P0560150
      MCAVI = 64                                                        P0560160
      MCBVI = -512                                                      P0560170
      MCCVI = 2                                                         P0560180
      MCDVI = 4                                                         P0560190
      MCEVI = 8                                                         P0560200
      CMAVS = FLOAT(MCAVI)                                              P0560210
      CMBVS = CMAVS - 64.0                                              P0560220
      WRITE (NUVI,0561) CMBVS                                           P0560230
      CMAVS = FLOAT(MCBVI)                                              P0560240
      CMBVS = CMAVS + 512.0                                             P0560250
      WRITE (NUVI,0561) CMBVS                                           P0560260
      CMBVS= FLOAT(-2*MCEVI)+FLOAT(MCCVI*MCDVI)*FLOAT(MCEVI/MCDVI)-     P0560270
     -  FLOAT(MCDVI**MCCVI) + 16.0                                      P0560280
      WRITE (NUVI,0561) CMBVS                                           P0560290
      WRITE (NUVI,0562)                                                 P0560300
      WRITE (NUVI,0563)                                                 P0560310
0561  FORMAT  (/2X,F15.1)                                               P0560320
0562  FORMAT  (/2X,37HTHE ABOVE ANSWERS SHOULD ALL BE 0 FOR)            P0560330
0563  FORMAT  (2X,35HTHIS TEST SEGMENT TO BE SUCCESSFUL.)               P0560340
C*****    END OF TEST SEGMENT 056                                       P0560350
C*****  WHEN EXECUTING ONLY SEGMENT 056, THE  STOP  AND  END  CARDS     P0560360
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0560370
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0560380
C=    STOP                                                              P0560390
C=    END                                                               P0560400
      STOP                                                              P056C1
      END                                                               P056C2
C***********************************************************************P0570010
C*****                                                                  P0570020
C*****                       IFFIX - (057)                              P0570030
C*****                                                                  P0570040
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C***********************************************************************P0570050
C*****  GENERAL PURPOSE                                         ASA REF P0570060
C*****    TEST INTRINSIC FUNCTION - IFIX - (CONVERSION FROM      8.2   P0570070
C*****    REAL TO INTEGER)                                     (TABLE 3)P0570080
C*****                                                                  P0570090
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0570100
C*****                                                                  P0071040
C*****  WHEN EXECUTING ONLY SEGMENT 057, THE FOLLOWING STATEMENT        P0071045
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071050
C*****                                                                  P0071055
C=    NUVI = 6                                                          P0071060
      NUVI = 6                                                          P057B1
C*****                                                                  P0071065
      WRITE (NUVI,0570)                                                 P0570110
0570  FORMAT  (1H1,1X,34HIFFIX - (057) INTRINSIC FUNCTION--/16X,       4P0570120
     1HIFIX//2X,14HASA REF. - 8.2//2X,7HRESULTS)                        P0570130
C*****    HEADER FOR SEGMENT 057                                        P0570140
C*****    SINGLE PRECISION ARGUMENT, INTEGER FUNCTION                   P0570150
      CMAVS = 2.4567                                                    P0570160
      CMBVS = -0.2001E2                                                 P0570170
      CMCVS = +5.61E-1                                                  P0570180
      CMDVS = -123.456E0                                                P0570190
      CMEVS = 789.9876E-2                                               P0570200
      CMFVS = 2.0                                                       P0570210
      CMGVS = -0.5                                                      P0570220
      MCAVI = IFIX(CMAVS)                                               P0570230
      MCBVI = MCAVI -2                                                  P0570240
      WRITE (NUVI,0571) MCBVI                                           P0570250
      MCAVI = IFIX(CMBVS)                                               P0570260
      MCBVI = MCAVI + 20                                                P0570270
      WRITE (NUVI,0571) MCBVI                                           P0570280
      MCAVI = IFIX(CMCVS)                                               P0570290
      WRITE (NUVI,0571) MCAVI                                           P0570300
      MCAVI = IFIX(CMDVS)                                               P0570310
      MCBVI = MCAVI + 123                                               P0570320
      WRITE (NUVI,0571) MCBVI                                           P0570330
      MCAVI = IFIX(CMEVS)                                               P0570340
      MCBVI = MCAVI - 7                                                 P0570350
      WRITE (NUVI,0571) MCBVI                                           P0570360
      MCBVI = IFIX(CMBVS*CMGVS)*IFIX(CMDVS/CMFVS)-                      P0570370
     - IFIX(CMBVS**IFIX(CMFVS))+1010                                    P0570380
      WRITE(NUVI,0571) MCBVI                                            P0570390
      WRITE (NUVI,0572)                                                 P0570400
      WRITE (NUVI,0573)                                                 P0570410
0571  FORMAT   (/10X,I6)                                                P0570420
0572  FORMAT     (/2X,37HTHE ABOVE ANSWERS SHOULD ALL BE 0 FOR)         P0570430
0573  FORMAT     (2X,35HTHIS TEST SEGMENT TO BE SUCCESSFUL.)            P0570440
C*****    END OF TEST SEGMENT 057                                       P0570450
C*****  WHEN EXECUTING ONLY SEGMENT 057, THE  STOP  AND  END  CARDS     P0570460
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0570470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0570480
C=    STOP                                                              P0570490
C=    END                                                               P0570500
      STOP                                                              P057C1
      END                                                               P057C2
C***********************************************************************P0580010
C*****                                                                  P0580020
C*****                       IFSGN - (058)                              P0580030
C*****                                                                  P0580040
C***********************************************************************P0580050
C*****  GENERAL PURPOSE                                         ASA REF P0580060
C*****    TEST INTRINSIC FUNCTION - SIGN, ISIGN - (TRANSFER    8.2/31-32P0580070
C*****    OF SIGN - SIGN OF A2 TIMES ABS(A1)  )                (TABLE 3)P0580080
C*****                                                                  P0580090
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0580100
C*****                                                                  P0071070
C*****  WHEN EXECUTING ONLY SEGMENT 058, THE FOLLOWING STATEMENT        P0071075
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071080
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C*****                                                                  P0071085
C=    NUVI = 6                                                          P0071090
      NUVI = 6                                                          P058B1
C*****                                                                  P0071095
      WRITE (NUVI,0580)                                                 P0580110
0580  FORMAT  (1H1 ,1X,35HIFSGN - (058) INTRINSIC FUNCTIONS--/16X, 24   P0580120
     1 HSIGN, ISIGN (TRANSFER OF/16X,14HARGUMENT SIGN)//2X,14HASA REF.  P0580130
     2- 8.2//2X,7HRESULTS)                                              P0580140
C*****     HEADER FOR SEGMENT 058                                       P0580150
C*****     ARGUMENTS AND FUNCTION ARE ALL REAL-TYPE (SIGN)              P0580160
      CMAVS = 1.078                                                     P0580170
      CMBVS = -23.0E1                                                   P0580180
      CMCVS = -5.4567                                                   P0580190
      CMDVS = 7.567E-1                                                  P0580200
      CMGVS = +2.0                                                      P0580210
      CMHVS = -4.0                                                      P0580220
      CMIVS = +8.0                                                      P0580230
      CMEVS = SIGN(CMAVS,CMBVS)                                         P0580240
      CMFVS = CMEVS + 1.078                                             P0580250
      WRITE (NUVI,0581) CMFVS                                           P0580260
      CMEVS = SIGN(CMAVS,CMDVS)                                         P0580270
      CMFVS = CMEVS - 1.078                                             P0580280
      WRITE (NUVI,0581) CMFVS                                           P0580290
      CMEVS = SIGN(CMBVS,CMCVS)                                         P0580300
      CMFVS = CMEVS + 23.0E1                                            P0580310
      WRITE (NUVI,0581) CMFVS                                           P0580320
      CMEVS = SIGN(CMBVS,CMDVS)                                         P0580330
      CMFVS = CMEVS - 23.0E1                                            P0580340
      WRITE (NUVI,0581) CMFVS                                           P0580350
      CMFVS = SIGN(CMGVS,CMHVS)*SIGN(CMHVS,CMIVS)+                      P0580360
     - SIGN(SIGN(CMIVS,CMBVS),SIGN(CMHVS,CMGVS))                        P0580370
      WRITE(NUVI,0581) CMFVS                                            P0580380
C*****     ARGUMENTS AND FUNCTION ARE ALL INTEGER-TYPE (ISIGN)          P0580390
      MCAVI = 24                                                        P0580400
      MCBVI = +167                                                      P0580410
      MCCVI = -5980                                                     P0580420
      MCDVI = -12345                                                    P0580430
      MCGVI = 2                                                         P0580440
      MCHVI = -4                                                        P0580450
      MCIVI = 8                                                         P0580460
      MCEVI = ISIGN(MCAVI,MCBVI)                                        P0580470
      MCFVI = MCEVI - 24                                                P0580480
      WRITE (NUVI,0582) MCFVI                                           P0580490
      MCEVI = ISIGN(MCBVI,MCCVI)                                        P0580500
      MCFVI = MCEVI + 167                                               P0580510
      WRITE (NUVI,0582) MCFVI                                           P0580520
      MCEVI = ISIGN(MCCVI,MCDVI)                                        P0580530
      MCFVI = MCEVI + 5980                                              P0580540
      WRITE (NUVI,0582) MCFVI                                           P0580550
      MCEVI = ISIGN(MCDVI,MCAVI)                                        P0580560
      MCFVI = MCEVI - 12345                                             P0580570
      WRITE (NUVI,0582) MCFVI                                           P0580580
      MCFVI = ISIGN(ISIGN(MCGVI*MCHVI+(2*MCIVI),MCIVI/MCGVI+MCCVI)+     P0580590
     1        ISIGN(+8,MCHVI/MCGVI+MCCVI),MCIVI) - MCHVI **2            P0580600
      WRITE(NUVI,0582)MCFVI                                             P0580610
      WRITE (NUVI,0583)                                                 P0580620
      WRITE(NUVI,0584)                                                  P0580630
0581  FORMAT      (/2X,F15.1)                                           P0580640
0582  FORMAT      (/10X,I5)                                             P0580650
0583  FORMAT      (/2X,37HTHE ABOVE ANSWERS SHOULD ALL BE 0 FOR)        P0580660
0584  FORMAT      (2X,35HTHIS TEST SEGMENT TO BE SUCCESSFUL.)           P0580670
C*****     END OF TEST SEGMENT 058                                      P0580680
C*****  WHEN EXECUTING ONLY SEGMENT 058, THE  STOP  AND  END  CARDS     P0580690
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0580700
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0580710
C=    STOP                                                              P0580720
C=    END                                                               P0580730
      STOP                                                              P058C1
      END                                                               P058C2
C***********************************************************************P0590010
C*****                                                                  P0590020
C*****                          IFDAB - (059)                           P0590030
C*****                                                                  P0590040
C***********************************************************************P0590050
C*****  GENERAL PURPOSE                                         ASA REF P0590060
C*****    TEST INTRINSIC FUNCTION DABS (ABSOLUTE VALUE OF          8.2  P0590070
C*****    A DOUBLE PRECISION ARGUMENT)                         (TABLE 3)P0590080
C*****                                                                  P0590090
C*****  S P E C I F I C A T I O N S  SEGMENT 059                        P0590100
C*****                                                                  P0011330
C*****  WHEN EXECUTING ONLY SEGMENT 059, THE SPECIFICATION STATEMENTS   P0011335
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0011340
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0011345
C*****                                                                  P0011350
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD        P0011355
      DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD        P059A1
C*****                                                                  P0011360
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0590110
C*****                                                                  P0071100
C*****  WHEN EXECUTING ONLY SEGMENT 059, THE FOLLOWING STATEMENT        P0071105
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071110
C*****                                                                  P0071115
C=    NUVI = 6                                                          P0071120
      NUVI = 6                                                          P059B1
C*****                                                                  P0071125
      WRITE (NUVI,0590)                                                 P0590120
0590  FORMAT (1H1,1X,34HIFDAB - (059) INTRINSIC FUNCTION--/16X,         P0590130
     123HDABS (ABSOLUTE VALUE OF/16X,16HA D.P. ARGUMENT)/  2X,          P0590140
     214HASA REF. - 8.2//                                               P0590150
     32X,7HRESULTS)                                                     P0590160
C*****    HEADER FOR SEGMENT 059 WRITTEN                                P0590170
C*****    ARGUMENT AND FUNCTION ARE DOUBLE PRECISION                    P0590180
      DPAVD = 1.2345678901234D0                                         P0590190
      DPBVD = -2.0D0                                                    P0590200
      DPCVD = -39.468024681357D-1                                       P0590210
      DPDVD = 2.0D0                                                     P0590220
      DPGVD = -4.0D0                                                    P0590230
      DPEVD = 1.0D0                                                     P0590240
      DPEVD = DABS(DPAVD)                                               P0590250
      DPFVD = DPEVD - 1.2345678901234D0                                 P0590260
      WRITE (NUVI,0591) DPFVD                                           P0590270
      DPEVD = 2.0D0*DPBVD+DABS(DPDVD*DPGVD+DABS(DPGVD/(2.0D0*DPDVD)     P0590280
     - *DPDVD**2))                                                      P0590290
      WRITE (NUVI,0591) DPEVD                                           P0590300
      DPEVD = 3.0D0                                                     P0590310
      DPEVD = DABS(DPCVD)                                               P0590320
      DPFVD = DPEVD - 39.468024681357D-1                                P0590330
      WRITE (NUVI,0591) DPFVD                                           P0590340
      DPEVD = 4.0D0                                                     P0590350
      DPEVD = DPGVD +DPDVD+DABS(DPBVD+DABS(DPGVD)-DABS(DPDVD-DPBVD))    P0590360
      WRITE (NUVI,0591) DPEVD                                           P0590370
      WRITE (NUVI,0592)                                                 P0590380
      WRITE (NUVI,0593)                                                 P0590390
0591  FORMAT (/ D22.10)                                                 P0590400
0592  FORMAT (/ 39H  THE ABOVE ANSWERS SHOULD ALL BE 0 FOR)             P0590410
0593  FORMAT (36H  THIS TEST SEGMENT TO BE SUCCESSFUL)                  P0590420
C*****    END OF TEST SEGMENT 059                                       P0590430
C*****  WHEN EXECUTING ONLY SEGMENT 059, THE  STOP  AND  END  CARDS     P0590440
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0590450
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0590460
C=    STOP                                                              P0590470
C=    END                                                               P0590480
      STOP                                                              P059C1
      END                                                               P059C2
C***********************************************************************P0600010
C*****                                                                  P0600020
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C*****                       IFTRN - (060)                              P0600030
C*****                                                                  P0600040
C***********************************************************************P0600050
C*****  GENERAL PURPOSE                                         ASA REF P0600060
C*****    TEST INTRINSIC FUNCTIONS AINT,INT, AND IDINT --         8.2   P0600070
C*****    TRUNCATION (SIGN OF A * LARGEST INTEGER LE ABS(A) )  (TABLE 3)P0600080
C*****                                                                  P0600090
C*****  S P E C I F I C A T I O N S  SEGMENT 060                        P0600100
C*****                                                                  P0011370
C*****  WHEN EXECUTING ONLY SEGMENT 060, THE SPECIFICATION STATEMENTS  P0011375
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                P0011380
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0011385
C*****                                                                  P0011390
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD                          P0011395
      DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD                          P060A1
C*****                                                                  P0011400
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0600110
C*****                                                                  P0071130
C*****  WHEN EXECUTING ONLY SEGMENT 060, THE FOLLOWING STATEMENT        P0071135
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071140
C*****                                                                  P0071145
C=    NUVI = 6                                                          P0071150
      NUVI = 6                                                          P060B1
C*****                                                                  P0071155
      WRITE (NUVI,0600)                                                 P0600120
0600  FORMAT (1H1, 1X,34HIFTRN - (060) INTRINSIC FUNCTION--/10X,29HAINT,P0600130
     1 INT, IDINT (TRUNCATION)//16H  ASA REF. - 8.2//2X,7HRESULTS)      P0600140
C*****    HEADER FOR SEGMENT 060 WRITTEN                                P0600150
C*****    TEST OF AINT - REAL ARGUMENT AND REAL FUNCTION                P0600160
      CMAVS = 1.999                                                     P0600170
      CMBVS = 999.001                                                   P0600180
      CMCVS = -0.45678                                                  P0600190
      CMDVS = -9876.0                                                   P0600200
      CMEVS = 1.0                                                       P0600210
      CMEVS = AINT(CMAVS)                                               P0600220
      CMFVS = CMEVS - 1.0                                               P0600230
      WRITE (NUVI,0601) CMFVS                                           P0600240
      CMEVS = 2.0                                                       P0600250
      CMEVS = AINT(CMBVS)                                               P0600260
      CMFVS = CMEVS - 999.0                                             P0600270
      WRITE (NUVI,0601) CMFVS                                           P0600280
      CMEVS = 3.0                                                       P0600290
      CMEVS = AINT(CMCVS)                                               P0600300
      CMFVS = CMEVS                                                     P0600310
      WRITE (NUVI,0601) CMFVS                                           P0600320
      CMEVS = 4.0                                                       P0600330
      CMEVS = AINT(CMDVS)                                               P0600340
      CMFVS = CMEVS + 9876.0                                            P0600350
      WRITE (NUVI,0601) CMFVS                                           P0600360
      WRITE (NUVI,0603)                                                 P0600370
C*****    TEST OF INT - REAL ARGUMENT BUT INTEGER FUNCTION              P0600380
      MCAVI = 5                                                         P0600390
      MCAVI = INT(CMAVS)                                                P0600400
      MCBVI = MCAVI - 1                                                 P0600410
      WRITE (NUVI,0604) MCBVI                                           P0600420
      MCAVI = 6                                                         P0600430
      MCAVI = INT(CMBVS)                                                P0600440
      MCBVI = MCAVI - 999                                               P0600450
      WRITE (NUVI,0604) MCBVI                                           P0600460
      MCAVI = 7                                                         P0600470
      MCAVI = INT(CMCVS)                                                P0600480
      WRITE (NUVI,0604) MCAVI                                           P0600490
      MCAVI = 8                                                         P0600500
      MCAVI = INT(CMDVS)                                                P0600510
      MCBVI = MCAVI + 9876                                              P0600520
      WRITE (NUVI,0604) MCBVI                                           P0600530
      WRITE (NUVI,0605)                                                 P0600540
C*****    TEST OF IDINT - DOUBLE PRECISION ARGUMENT AND FUNCTION        P0600550
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      DPAVD = 1.9999999999999D1                                         P0600560
      DPBVD = +99.000500189123D0                                        P0600570
      DPCVD = -0.987654321019BD0                                        P0600580
      DPDVD = -456.78909876514D1                                        P0600590
      MCAVI = 9                                                         P0600600
      MCAVI = IDINT(DPAVD)                                              P0600610
      MCBVI = MCAVI - 19                                                P0600620
      WRITE (NUVI,0606) MCBVI                                           P0600630
      MCAVI = 10                                                        P0600640
      MCAVI = IDINT(DPBVD)                                              P0600650
      MCBVI = MCAVI - 99                                                P0600660
      WRITE (NUVI,0606) MCBVI                                           P0600670
      MCAVI = 11                                                        P0600680
      MCAVI = IDINT(DPCVD)                                              P0600690
      WRITE (NUVI,0606) MCAVI                                           P0600700
      MCAVI = 12                                                        P0600710
      MCAVI = IDINT(DPDVD)                                              P0600720
      MCBVI = MCAVI + 4567                                              P0600730
      WRITE (NUVI,0606) MCBVI                                           P0600740
      WRITE (NUVI,0607)                                                 P0600750
      WRITE (NUVI,0608)                                                 P0600760
0601  FORMAT (/F11.1)                                                   P0600770
0603  FORMAT (  2X,16HEND OF AINT TEST)                                 P0600780
0604  FORMAT (/I10)                                                     P0600790
0605  FORMAT (  2X,15HEND OF INT TEST)                                  P0600800
0606  FORMAT (/I10)                                                     P0600810
0607  FORMAT (  2X,17HEND OF IDINT TEST)                                P0600820
0608  FORMAT (  40H  ALL ABOVE ANSWERS SHOULD BE 0 FOR THIS/            P0600830
     1 31H  TEST SEGMENT TO BE SUCCESSFUL)                              P0600840
C*****     END OF TEST SEGMENT 060                                      P0600850
C*****   WHEN EXECUTING ONLY SEGMENT 060, THE  STOP  AND  END  CARDS    P0600860
C*****   WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                P0600870
C*****   IN COLUMNS  1  AND  2  REMOVED.                                P0600880
C=    STOP                                                              P0600890
C=    END                                                               P0600900
      STOP                                                              P060C1
      END                                                               P060C2
C***********************************************************************P0610010
C*****                                                                  P0610020
C*****                        IFMOD - (061)                             P0610030
C*****                                                                  P0610040
C***********************************************************************P0610050
C*****   GENERAL PURPOSE                                        ASA REF P0610060
C*****     TEST INTRINSIC FUNCTION AMOD AND MOD - REMAINDERING,    8.2  P0610070
C*****     WHICH IS DEFINED AS A1-(A1/A2)A2 WHERE (X) IS AN     (TABLE 3)P0610080
C*****     INTEGER WHOSE MAGNITUDE IS LE ABS(X) AND WHOSE SIGN          P0610090
C*****     IS THE SAME AS X.                                            P0610100
C*****                                                                  P0610110
C*****   O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0610120
C*****                                                                  P0071160
C*****   WHEN EXECUTING ONLY SEGMENT 061, THE FOLLOWING STATEMENT       P0071165
C*****   NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.        P0071170
C*****                                                                  P0071175
C=    NUVI = 6                                                          P0071180
      NUVI = 6                                                          P061B1
C*****                                                                  P0071185
      WRITE (NUVI,0610)                                                 P0610130
0610  FORMAT (1H1, 1X,34HIFMOD - (061) INTRINSIC FUNCTION--/16X,24HAMOD,P0610140
     1 MOD (REMAINDERING)//16H  ASA REF. - 8.2//2X,                     P0610150
     2 7HRESULTS)                                                       P0610160
C*****     HEADER FOR SEGMENT 061 WRITTEN                               P0610170
C*****     TEST OF AMOD - REAL ARGUMENTS AND REAL FUNCTION              P0610180
      CMAVS = 16.0625                                                   P0610190
      CMBVS = -4.0                                                      P0610200
      CMCVS = -8.125                                                    P0610210
      CMDVS = 2.5                                                       P0610220
      CMEVS = -1.0                                                      P0610230
      CMFVS = 1.0                                                       P0610240
      CMFVS = AMOD(CMAVS,CMBVS)                                         P0610250
      CMGVS = CMFVS - 0.0625                                            P0610260
      WRITE (NUVI,0611) CMGVS                                           P0610270
      CMFVS = 2.0                                                       P0610280
      CMFVS = AMOD(CMCVS,CMDVS)                                         P0610290
      CMGVS = CMFVS + 0.625                                             P0610300
      WRITE (NUVI,0611) CMGVS                                           P0610310
      CMFVS = 3.0                                                       P0610320
      CMFVS = AMOD(CMBVS,CMEVS)                                         P0610330
      CMGVS = CMFVS + 0.0                                               P0610340
      WRITE (NUVI,0611) CMGVS                                           P0610350
      CMFVS = 4.0                                                       P0610360
      CMFVS = AMOD(CMBVS,CMAVS)                                         P0610370
      CMGVS = CMFVS + 4.0                                               P0610380
      WRITE (NUVI,0611) CMGVS                                           P0610390
      WRITE (NUVI,0612)                                                 P0610400
C*****    TEST OF MOD - INTEGER ARGUMENTS AND INTEGER FUNCTION          P0610410
      MCAVI = 35                                                        P0610420
      MCBVI = -5                                                        P0610430
      MCCVI = -998                                                      P0610440
      MCDVI = 9                                                         P0610450
      MCEVI = 10                                                        P0610460
      MCFVI = 1                                                         P0610470
      MCFVI = MOD(MCAVI,MCBVI)                                          P0610480
      MCGVI = MCFVI + 0                                                 P0610490
      WRITE (NUVI,0613) MCGVI                                           P0610500
      MCFVI = 2                                                         P0610510
      MCFVI = MOD(MCCVI,MCDVI)                                          P0610520
      MCGVI = MCFVI + 8                                                 P0610530
      WRITE (NUVI,0613) MCGVI                                           P0610540
      MCFVI = 3                                                         P0610550
      MCFVI = MOD(MCAVI,MCDVI)                                          P0610560
      MCGVI = MCFVI - 8                                                 P0610570
      WRITE (NUVI,0613) MCGVI                                           P0610580
      MCFVI = 4                                                         P0610590
      MCFVI = MOD(MCBVI,MCEVI)                                          P0610600
      MCGVI = MCFVI + 5                                                 P0610610
      WRITE (NUVI,0613) MCGVI                                           P0610620
      WRITE (NUVI,0614)                                                 P0610630
0611  FORMAT (/F11.1)                                                   P0610640
0612  FORMAT   (//2X,17HEND OF AMOD TEST.)                              P0610650
0613  FORMAT (/I10)                                                     P0610660
0614  FORMAT (//2X,16HEND OF MOD TEST.//2X,                             P0610670
     138HALL ABOVE ANSWERS SHOULD BE 0 FOR THIS/2X,                     P0610680
     230HTEST SEGMENT TO BE SUCCESSFUL.)                                P0610690
C*****    END OF TEST SEGMENT 061                                       P0610700
C*****  WHEN EXECUTING ONLY SEGMENT 061, THE  STOP  AND  END  CARDS     P0610710
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                  P0610720
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0610730
C=    STOP                                                              P0610740
C=    END                                                               P0610750
      STOP                                                              P061C1
      END                                                               P061C2
C***********************************************************************P0620010
C*****                                                                  P0620020
C*****                       IFMAX - (062)                              P0620030
C*****                                                                  P0620040
C***********************************************************************P0620050
C*****  GENERAL PURPOSE                                         ASA REF P0620060
C*****    TEST OF INTRINSIC FUNCTION AMAX0,AMAX1,MAX0,MAX1 AND    8.2   P0620070
C*****    DMAX1 -- CHOOSING LARGEST VALUE                      (TABLE 3)P0620080
C*****                                                                  P0620090
C*****  S P E C I F I C A T I O N S  SEGMENT 062                        P0620100
C*****                                                                  P0011410
C*****  WHEN EXECUTING ONLY SEGMENT 062, THE SPECIFICATION STATEMENTS   P0011415
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0011420
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0011425
C*****                                                                  P0011430
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C=    DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P0011435
      DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P062A1
C*****                                                                  P0011440
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0620110
C*****                                                                  P0071190
C*****  WHEN EXECUTING ONLY SEGMENT 062, THE FOLLOWING STATEMENT        P0071195
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071200
C*****                                                                  P0071205
C=    NUVI = 6                                                          P0071210
      NUVI = 6                                                          P062B1
C*****                                                                  P0071215
      WRITE (NUVI,0620)                                                 P0620120
0620  FORMAT (1H1, 1X,35HIFMAX - (062) INTRINSIC FUNCTIONS--/13X,28HAMAXP0620130
     10,AMAX1,MAX0, MAX1,DMAX1     / 2X,14HASA REF. - 8.2//2X,7HRESULTS) P0620140
C*****    TEST OF AMAX0 - INTEGER ARGUMENTS, REAL FUNCTION          8.2/19P0620150
C*****    TWO ARGUMENTS FOR AMAX0                                       P0620160
      WRITE (NUVI,0625)                                                 P0620170
      MCAVI = 128                                                       P0620180
      MCBVI = 64                                                        P0620190
      MCCVI = -8                                                        P0620200
      MCDVI = -4096                                                     P0620210
      CMEVS = 1.0                                                       P0620220
      CMEVS = AMAX0(MCAVI,MCBVI)                                        P0620230
      CMFVS = CMEVS - 128.0                                             P0620240
      WRITE (NUVI,0621) CMFVS                                           P0620250
      CMEVS = 2.0                                                       P0620260
      CMEVS = AMAX0(MCCVI,MCCVI)                                        P0620270
      CMFVS = CMEVS + 8.0                                               P0620280
      WRITE (NUVI,0621) CMFVS                                           P0620290
      CMEVS = 3.0                                                       P0620300
      CMEVS = AMAX0(MCAVI,MCCVI)                                        P0620310
      CMFVS = CMEVS - 128.0                                             P0620320
      WRITE (NUVI,0621) CMFVS                                           P0620330
      CMEVS = 4.0                                                       P0620340
      CMEVS = AMAX0(MCCVI,MCDVI)                                        P0620350
      CMFVS = CMEVS + 8.0                                               P0620360
      WRITE (NUVI,0621) CMFVS                                           P0620370
      CMEVS = 5.0                                                       P0620380
      CMEVS = AMAX0(MCDVI,MCBVI)                                        P0620390
      CMFVS = CMEVS - 64.0                                              P0620400
      WRITE (NUVI,0621) CMFVS                                           P0620410
      MCGVI = 2                                                         P0620420
      WRITE (NUVI,0622) MCGVI                                           P0620430
C*****    THREE ARGUMENTS FOR AMAX0                                     P0620440
      CMEVS = 6.0                                                       P0620450
      CMEVS = AMAX0(MCCVI,MCBVI,MCAVI)                                  P0620460
      CMFVS = CMEVS - 128.0                                             P0620470
      WRITE (NUVI,0621) CMFVS                                           P0620480
      CMEVS = 7.0                                                       P0620490
      CMEVS = AMAX0(MCDVI,MCBVI,MCCVI)                                  P0620500
      CMFVS = CMEVS - 64.0                                              P0620510
      WRITE (NUVI,0621) CMFVS                                           P0620520
      CMEVS = 8.0                                                       P0620530
      CMEVS = AMAX0(MCDVI,MCCVI,MCCVI)                                  P0620540
      CMFVS = CMEVS + 8.0                                               P0620550
      WRITE (NUVI,0621) CMFVS                                           P0620560
      MCGVI = 3                                                         P0620570
      WRITE (NUVI,0622) MCGVI                                           P0620580
C*****    FOUR OR FIVE ARGUMENTS FOR AMAX0                              P0620590
      CMEVS = 9.0                                                       P0620600
      CMEVS = AMAX0(MCAVI,MCBVI,MCCVI,MCDVI)                            P0620610
      CMFVS = CMEVS - 128.0                                             P0620620
      WRITE (NUVI,0621) CMFVS                                           P0620630
      CMEVS = 10.0                                                      P0620640
      CMEVS = AMAX0(MCAVI,MCBVI,MCCVI,MCDVI,MCAVI)                      P0620650
      CMFVS = CMEVS - 128.0                                             P0620660
      WRITE (NUVI,0621) CMFVS                                           P0620670
      WRITE (NUVI,0623)                                                 P0620680
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C*****    TEST OF AMAX1 - REAL ARGUMENTS AND FUNCTION             8.2/20P0620690
C*****    TWO ARGUMENTS FOR AMAX1                                       P0620700
      WRITE (NUVI,0624)                                                 P0620710
      CMAVS = 102.0E0                                                   P0620720
      CMBVS = +76.12                                                    P0620730
      CMCVS = -85.43E1                                                  P0620740
      CMDVS = -0.986                                                    P0620750
      CMEVS = AMAX1(CMAVS,CMBVS)                                        P0620760
      CMFVS = CMEVS - 102.0E0                                           P0620770
      WRITE (NUVI,0621) CMFVS                                           P0620780
      CMEVS = AMAX1(CMBVS,CMCVS)                                        P0620790
      CMFVS = CMEVS - 76.12                                             P0620800
      WRITE (NUVI,0621) CMFVS                                           P0620810
      CMEVS = AMAX1(CMDVS,CMCVS)                                        P0620820
      CMFVS = CMEVS + 0.986                                             P0620830
      WRITE (NUVI,0621) CMFVS                                           P0620840
      MCGVI = 2                                                         P0620850
      WRITE (NUVI,0622) MCGVI                                           P0620860
C*****    THREE ARGUMENTS FOR AMAX1                                     P0620870
      CMEVS = AMAX1(CMCVS,CMBVS,CMAVS)                                  P0620880
      CMFVS = CMEVS - 102.0E0                                           P0620890
      WRITE (NUVI,0621) CMFVS                                           P0620900
      CMEVS = AMAX1(CMDVS,CMBVS,CMCVS)                                  P0620910
      CMFVS = CMEVS - 76.12                                             P0620920
      WRITE (NUVI,0621) CMFVS                                           P0620930
      CMEVS = AMAX1(CMCVS,CMCVS,CMCVS)                                  P0620940
      CMFVS = CMEVS - CMCVS                                             P0620950
      WRITE (NUVI,0621) CMFVS                                           P0620960
      MCGVI = 3                                                         P0620970
      WRITE (NUVI,0622) MCGVI                                           P0620980
C*****    FOUR OR FIVE ARGUMENTS FOR AMAX1                              P0620990
      CMEVS = AMAX1(CMAVS,CMBVS,CMCVS,CMDVS)                            P0621000
      CMFVS = CMEVS - 102.0E0                                           P0621010
      WRITE (NUVI,0621) CMFVS                                           P0621020
      CMEVS = AMAX1(CMAVS,CMCVS,CMDVS,CMBVS,CMAVS)                      P0621030
      CMFVS = CMEVS - 102.0E0                                           P0621040
      WRITE (NUVI,0621) CMFVS                                           P0621050
      WRITE (NUVI,0623)                                                 P0621060
C*****    TEST OF MAX0 - INTEGER ARGUMENTS AND FUNCTION          8.2/21P0621070
C*****    TWO ARGUMENTS FOR MAX0                                        P0621080
      WRITE (NUVI,0628)                                                 P0621090
      MCEVI = MAX0(MCAVI,MCBVI)                                         P0621100
      MCFVI = MCEVI - 128                                               P0621110
      WRITE (NUVI,0626) MCFVI                                           P0621120
      MCEVI = MAX0(MCCVI,MCDVI)                                         P0621130
      MCFVI = MCEVI + 8                                                 P0621140
      WRITE (NUVI,0626) MCFVI                                           P0621150
      MCEVI = MAX0(MCBVI,MCCVI)                                         P0621160
      MCFVI = MCEVI - 64                                                P0621170
      WRITE (NUVI,0626) MCFVI                                           P0621180
      MCEVI = MAX0(MCCVI,MCCVI)                                         P0621190
      MCFVI = MCEVI - MCCVI                                             P0621200
      WRITE (NUVI,0626) MCFVI                                           P0621210
      MCGVI = 2                                                         P0621220
      WRITE (NUVI,0622) MCGVI                                           P0621230
C*****    THREE ARGUMENTS FOR MAX0                                      P0621240
      MCEVI = MAX0(MCCVI,MCBVI,MCAVI)                                   P0621250
      MCFVI = MCEVI - 128                                               P0621260
      WRITE (NUVI,0626) MCFVI                                           P0621270
      MCEVI = MAX0(MCDVI,MCDVI,MCCVI)                                   P0621280
      MCFVI = MCEVI + 8                                                 P0621290
      WRITE (NUVI,0626) MCFVI                                           P0621300
      MCGVI = 3                                                         P0621310
      WRITE (NUVI,0622) MCGVI                                           P0621320
C*****    FOUR OR FIVE ARGUMENTS FOR MAX0                               P0621330
      MCEVI = MAX0(MCDVI,MCCVI,MCBVI,MCAVI)                             P0621340
      MCFVI = MCEVI - 128                                               P0621350
      WRITE (NUVI,0626) MCFVI                                           P0621360
      MCEVI = MAX0(MCAVI,MCCVI,MCBVI,MCDVI,MCBVI)                       P0621370
      MCFVI = MCEVI - 128                                               P0621380
      WRITE (NUVI,0626) MCFVI                                           P0621390
      WRITE (NUVI,0623)                                                 P0621400
C*****    TEST OF MAX1 - REAL ARGUMENTS AND INTEGER FUNCTION      8.2/22P0621410
C*****    TWO ARGUMENTS FOR MAX1                                        P0621420
      WRITE (NUVI,0629)                                                 P0621430
      MCEVI = MAX1(CMAVS,CMBVS)                                         P0621440
      MCFVI = MCEVI - 102                                               P0621450
      WRITE (NUVI,0626) MCFVI                                           P0621460
      MCEVI = MAX1(CMBVS,CMCVS)                                         P0621470
      MCFVI = MCEVI - 76                                                P0621480
      WRITE (NUVI,0626) MCFVI                                           P0621490
      MCEVI = MAX1(CMDVS,CMCVS)                                         P0621500
      MCFVI = MCEVI + 0                                                 P0621510
      WRITE (NUVI,0626) MCFVI                                           P0621520
      MCGVI = 2                                                         P0621530
      WRITE (NUVI,0622) MCGVI                                           P0621540
C*****    THREE ARGUMENTS FOR MAX1                                      P0621550
      MCEVI = MAX1(CMCVS,CMBVS,CMAVS)                                   P0621560
      MCFVI = MCEVI - 102                                               P0621570
      WRITE (NUVI,0626) MCFVI                                           P0621580
      MCEVI = MAX1(CMDVS,CMCVS,CMBVS)                                   P0621590
      MCFVI = MCEVI - 76                                                P0621600
      WRITE (NUVI,0626) MCFVI                                           P0621610
      MCGVI = 3                                                         P0621620
      WRITE (NUVI,0622) MCGVI                                           P0621630
C*****    FOUR OR FIVE ARGUMENTS FOR MAX1                               P0621640
      MCEVI = MAX1(CMAVS,CMBVS,CMCVS,CMDVS)                             P0621650
      MCFVI = MCEVI - 102                                               P0621660
      WRITE (NUVI,0626)  MCFVI                                          P0621670
      MCEVI = MAX1(CMAVS,CMCVS,CMBVS,CMAVS,CMDVS)                       P0621680
      MCFVI = MCEVI - 102                                               P0621690
      WRITE (NUVI,0626) MCFVI                                           P0621700
      WRITE (NUVI,0623)                                                 P0621710
C*****    TEST OF DMAX1 - DOUBLE PRECISION ARGUMENTS AND FUNCTION 8.2/23P0621720
C*****    TWO ARGUMENTS FOR DMAX1                                       P0621730
      WRITE (NUVI,9999)                                                 P0621740
      MCAVD = 23.0D-1                                                   P0621750
      MCBVD = 111.789789D0                                              P0621760
      MCCVD = -99.66D-1                                                 P0621770
      MCDVD = -456.123D0                                                P0621780
      MCEVD = DMAX1(MCAVD,MCBVD)                                        P0621790
      MCFVD = MCEVD - 111.789789D0                                      P0621800
      WRITE (NUVI,0627) MCFVD                                           P0621810
      MCEVD = DMAX1( MCAVD, MCCVD)                                      P0621820
      MCFVD = MCEVD - 23.0D-1                                           P0621830
      WRITE (NUVI,0627) MCFVD                                           P0621840
      MCEVD = DMAX1(MCDVD,MCCVD)                                        P0621850
      MCFVD = MCEVD + 99.66D-1                                          P0621860
      WRITE (NUVI,0627) MCFVD                                           P0621870
      MCEVD = DMAX1(MCDVD,MCDVD)                                        P0621880
      MCFVD = MCEVD - MCDVD                                             P0621890
      WRITE (NUVI,0627) MCFVD                                           P0621900
      MCGVI = 2                                                         P0621910
      WRITE (NUVI,0622) MCGVI                                           P0621920
C*****    THREE ARGUMENTS FOR DMAX1                                     P0621930
      MCEVD = DMAX1(MCAVD,MCCVD,MCBVD)                                  P0621940
      MCFVD = MCEVD - 111.789789D0                                      P0621950
      WRITE (NUVI,0627) MCFVD                                           P0621960
      MCEVD = DMAX1(MCCVD,MCDVD,MCAVD)                                  P0621970
      MCFVD = MCEVD - 23.0D-1                                           P0621980
      WRITE (NUVI,0627) MCFVD                                           P0621990
      MCEVD = DMAX1(MCCVD,MCCVD,MCDVD)                                  P0622000
      MCFVD = MCEVD + 99.66D-1                                          P0622010
      WRITE (NUVI,0627) MCFVD                                           P0622020
      MCGVI = 3                                                         P0622030
      WRITE (NUVI,0622) MCGVI                                           P0622040
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C*****    FOUR OR FIVE ARGUMENTS FOR DMAX1                              P0622050
      MCEVD = DMAX1(MCAVD,MCCVD,MCBVD,MCDVD)                            P0622060
      MCFVD = MCEVD - 111.789789D0                                      P0622070
      WRITE (NUVI,0627) MCFVD                                           P0622080
      MCEVD = DMAX1(MCCVD,MCCVD,MCDVD,MCBVD,MCAVD)                      P0622090
      MCFVD = MCEVD - 111.789789D0                                      P0622100
      WRITE (NUVI,0627) MCFVD                                           P0622110
      WRITE (NUVI,0623)                                                 P0622120
      WRITE (NUVI,9998)                                                 P0622130
0621  FORMAT ( F11.1)                                                   P0622140
0622  FORMAT (  15X,9H  END OF ,I2,15H-ARGUMENT TEST.)                  P0622150
0623  FORMAT (  15X,31H  END OF 4- OR 5-ARGUMENT TEST.)                 P0622160
0624  FORMAT ( /2X,15HTEST OF AMAX1--)                                  P0622170
0625  FORMAT ( /2X,15HTEST OF AMAX0--)                                  P0622180
0626  FORMAT ( I10)                                                     P0622190
0627  FORMAT ( D22.10)                                                  P0622200
0628  FORMAT (2H1 ,14HTEST OF MAX0--)                                   P0622210
0629  FORMAT ( /2X,14HTEST OF MAX1--)                                   P0622220
9998  FORMAT (/ 39H  THE ABOVE ANSWERS SHOULD ALL BE 0 FOR/2X,          P0622230
     135HTHIS TEST SEGMENT TO BE SUCCESSFUL.)                           P0622240
9999  FORMAT ( /2X,15HTEST OF DMAX1--)                                  P0622250
C*****    END OF TEST SEGMENT 062                                       P0622260
C*****  WHEN EXECUTING ONLY SEGMENT 062, THE  STOP  AND  END  CARDS     P0622270
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0622280
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0622290
C=    STOP                                                              P0622300
C=    END                                                               P0622310
      STOP                                                              P062C1
      END                                                               P062C2
C***********************************************************************P0630010
C*****                                                                  P0630020
C*****                       IFMIN - (063)                              P0630030
C*****                                                                  P0630040
C***********************************************************************P0630050
C*****  GENERAL PURPOSE                                         ASA REF P0630060
C*****    TEST INTRINSIC FUNCTIONS AMIN0,AMIN1,MIN0,MIN1 AND      8.2   P0630070
C*****    DMIN1 -- CHOOSING SMALLEST VALUE.                    (TABLE 3)P0630080
C*****                                                                  P0630090
C*****  S P E C I F I C A T I O N S  SEGMENT 063                        P0630100
C*****                                                                  P0011450
C*****  WHEN EXECUTING ONLY SEGMENT 063, THE SPECIFICATION STATEMENTS   P0011455
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0011460
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0011465
C*****                                                                  P0011470
C=    DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P0011475
C*****                                                                  P0011480
      DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P063A1
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0630110
C*****                                                                  P0071220
C*****  WHEN EXECUTING ONLY SEGMENT 063, THE FOLLOWING STATEMENT        P0071225
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071230
C*****                                                                  P0071235
C=    NUVI = 6                                                          P0071240
      NUVI = 6                                                          P063B1
C*****                                                                  P0071245
      WRITE (NUVI,0630)                                                 P0630120
0630  FORMAT (1H1,1X,35HIFMIN - (063) INTRINSIC FUNCTIONS--/13X,27HAMIN0P0630130
     1,AMIN1,MIN0,MIN1,DMIN1/ 2X,14HASA REF. - 8.2//2X,7HRESULTS)       P0630140
C*****    TEST OF AMIN0 - INTEGER ARGUMENTS, REAL FUNCTION        8.2/24P0630150
C*****    TWO ARGUMENTS FOR AMIN0                                       P0630160
      WRITE (NUVI,0635)                                                 P0630170
      MCAVI = 128                                                       P0630180
      MCBVI = 64                                                        P0630190
      MCCVI = -8                                                        P0630200
      MCDVI = -4096                                                     P0630210
      CMEVS = AMIN0(MCAVI,MCBVI)                                        P0630220
      CMFVS = CMEVS - 64.0                                              P0630230
      WRITE (NUVI,0631) CMFVS                                           P0630240
      CMEVS = AMIN0(MCDVI,MCCVI)                                        P0630250
      CMFVS = CMEVS + 4096.0                                            P0630260
      WRITE (NUVI,0631) CMFVS                                           P0630270
      CMEVS = AMIN0(MCBVI,MCCVI)                                        P0630280
      CMFVS = CMEVS + 8.0                                               P0630290
      WRITE (NUVI,0631) CMFVS                                           P0630300
      MCGVI = 2                                                         P0630310
      WRITE (NUVI,0632) MCGVI                                           P0630320
C******     THREE-ARGUMENT TEST FOR AMIN0                               P0630330
      CMEVS = AMIN0(MCAVI,MCCVI,MCBVI)                                  P0630340
      CMFVS = CMEVS + 8.0                                               P0630350
      WRITE (NUVI,0631) CMFVS                                           P0630360
      CMEVS = AMIN0(MCBVI,MCBVI,MCDVI)                                  P0630370
      CMFVS = CMEVS + 4096.0                                            P0630380
      WRITE (NUVI,0631) CMFVS                                           P0630390
      MCGVI = 3                                                         P0630400
      WRITE (NUVI,0632) MCGVI                                           P0630410
C*****      FOUR OR FIVE ARGUMENTS FOR AMIN0                            P0630420
      CMEVS = AMIN0(MCAVI,MCCVI,MCDVI,MCBVI)                            P0630430
      CMFVS = CMEVS + 4096.0                                            P0630440
      WRITE (NUVI,0631) CMFVS                                           P0630450
      CMEVS = AMIN0(MCCVI,MCBVI,MCCVI,MCAVI,MCDVI)                      P0630460
      CMFVS = CMEVS + 4096.0                                            P0630470
      WRITE (NUVI,0631) CMFVS                                           P0630480
      WRITE (NUVI,0633)                                                 P0630490
C*****      TEST OF AMIN1 - REAL ARGUMENTS, REAL FUNCTION         8.2/25P0630500
C******     TWO ARGUMENTS TEST FOR AMIN1                                P0630510
      WRITE (NUVI,0634)                                                 P0630520
      CMAVS = 26.5                                                      P0630530
      CMBVS = 9.6666                                                    P0630540
      CMCVS = -1.65                                                     P0630550
      CMDVS = -10.001                                                   P0630560
      CMEVS = AMIN1(CMBVS,CMDVS)                                        P0630570
      CMFVS = CMEVS + 10.001                                            P0630580
      WRITE (NUVI,0631) CMFVS                                           P0630590
      CMEVS = AMIN1(CMAVS,CMBVS)                                        P0630600
      CMFVS = CMEVS - 9.6666                                            P0630610
      WRITE (NUVI,0631) CMFVS                                           P0630620
      CMEVS = AMIN1(CMCVS,CMDVS)                                        P0630630
      CMFVS = CMEVS + 10.001                                            P0630640
      WRITE (NUVI,0631) CMFVS                                           P0630650
      CMEVS = AMIN1(CMCVS,CMCVS)                                        P0630660
      CMFVS = CMEVS + 1.65                                              P0630670
      WRITE (NUVI,0631) CMFVS                                           P0630680
      MCGVI = 2                                                         P0630690
      WRITE (NUVI,0632) MCGVI                                           P0630700
C*****      THREE-ARGUMENT TEST FOR AMIN1                               P0630710
      CMEVS = AMIN1(CMBVS,CMCVS,CMDVS)                                  P0630720
      CMFVS = CMEVS + 10.001                                            P0630730
      WRITE (NUVI,0631) CMFVS                                           P0630740
      CMEVS = AMIN1(CMBVS,CMBVS,CMBVS)                                  P0630750
      CMFVS = CMEVS - 9.6666                                            P0630760
      WRITE (NUVI,0631) CMFVS                                           P0630770
      CMEVS = AMIN1(CMAVS,CMBVS,CMCVS)                                  P0630780
      CMFVS = CMEVS + 1.65                                              P0630790
      WRITE (NUVI,0631) CMFVS                                           P0630800
      MCGVI = 3                                                         P0630810
      WRITE (NUVI,0632) MCGVI                                           P0630820
C******     FOUR OR FIVE-ARGUMENT TEST FOR AMIN1                        P0630830
      CMEVS = AMIN1(CMAVS,CMBVS,CMCVS,CMDVS)                            P0630840
      CMFVS = CMEVS + 10.001                                            P0630850
      WRITE (NUVI,0631) CMFVS                                           P0630860
      CMEVS = AMIN1(CMAVS,CMCVS,CMBVS,CMCVS,CMDVS)                      P0630870
      CMFVS = CMEVS + 10.001                                            P0630880
      WRITE (NUVI,0631) CMFVS                                           P0630890
      WRITE (NUVI,0633)                                                 P0630900
C*****      TEST OF MIN0 - INTEGER ARGUMENTS, INTEGER FUNCTION    8.2/26P0630910
C*****      TWO-ARGUMENT TEST FOR MIN0                                  P0630920
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      WRITE (NUVI,0636)                                                 P0630930
      MCEVI = MINO(MCBVI,MCAVI)                                         P0630940
      MCFVI = MCEVI - 64                                                P0630950
      WRITE (NUVI,0639) MCFVI                                           P0630960
      MCEVI = MINO(MCBVI,MCCVI)                                         P0630970
      MCFVI = MCEVI + 8                                                 P0630980
      WRITE (NUVI,0639) MCFVI                                           P0630990
      MCEVI = MINO(MCCVI,MCDVI)                                         P0631000
      MCFVI = MCEVI + 4096                                              P0631010
      WRITE (NUVI,0639) MCFVI                                           P0631020
      MCEVI = MINO(MCAVI,0)                                             P0631030
      WRITE (NUVI,0639) MCEVI                                           P0631040
      MCGVI = 2                                                         P0631050
      WRITE (NUVI,0632) MCGVI                                           P0631060
C*****    THREE-ARGUMENT TEST FOR MINO                                  P0631070
      MCEVI = MINO(MCAVI,MCCVI,MCBVI)                                   P0631080
      MCFVI = MCEVI + 8                                                 P0631090
      WRITE (NUVI,0639) MCFVI                                           P0631100
      MCEVI = MINO(MCCVI,MCAVI,MCDVI)                                   P0631110
      MCFVI = MCEVI + 4096                                              P0631120
      WRITE (NUVI,0639) MCFVI                                           P0631130
      MCGVI = 3                                                         P0631140
      WRITE (NUVI,0632) MCGVI                                           P0631150
C*****    FOUR OR FIVE-ARGUMENT TEST FOR MINO                           P0631160
      MCEVI = MINO(MCBVI,MCAVI,MCCVI,MCDVI)                             P0631170
      MCFVI = MCEVI + 4096                                              P0631180
      WRITE (NUVI,0639) MCFVI                                           P0631190
      MCEVI = MINO(MCAVI,MCBVI,MCAVI,MCCVI,MCDVI)                       P0631200
      MCFVI = MCEVI + 4096                                              P0631210
      WRITE (NUVI,0639) MCFVI                                           P0631220
      WRITE (NUVI,0633)                                                 P0631230
C*****    TEST OF MIN1 - REAL ARGUMENTS, INTEGER FUNCTION        8.2/27P0631240
C*****    TWO-ARGUMENT TEST FOR MIN1                                    P0631250
      WRITE (NUVI,0637)                                                 P0631260
      MCEVI = MIN1(CMAVS,CMBVS)                                         P0631270
      MCFVI = MCEVI - 9                                                 P0631280
      WRITE (NUVI,0639) MCFVI                                           P0631290
      MCEVI = MIN1(CMCVS,CMDVS)                                         P0631300
      MCFVI = MCEVI + 10                                                P0631310
      WRITE (NUVI,0639) MCFVI                                           P0631320
      MCEVI = MIN1(CMAVS,CMCVS)                                         P0631330
      MCFVI = MCEVI + 1                                                 P0631340
      WRITE (NUVI,0639) MCFVI                                           P0631350
      MCGVI = 2                                                         P0631360
      WRITE (NUVI,0632) MCGVI                                           P0631370
C*****    THREE-ARGUMENT TEST FOR MIN1                                  P0631380
      MCEVI = MIN1(CMAVS,CMCVS,CMBVS)                                   P0631390
      MCFVI = MCEVI + 1                                                 P0631400
      WRITE (NUVI,0639) MCFVI                                           P0631410
      MCEVI = MIN1(CMAVS,CMCVS,CMDVS)                                   P0631420
      MCFVI = MCEVI + 10                                                P0631430
      WRITE (NUVI,0639) MCFVI                                           P0631440
      MCGVI = 3                                                         P0631450
      WRITE (NUVI,0632) MCGVI                                           P0631460
C*****    FOUR OR FIVE-ARGUMENT TEST FOR MIN1                           P0631470
      MCEVI = MIN1(CMAVS,CMBVS,CMDVS,CMCVS)                             P0631480
      MCFVI = MCEVI + 10                                                P0631490
      WRITE (NUVI,0639) MCFVI                                           P0631500
      MCEVI = MIN1(CMAVS,CMBVS,CMCVS,CMCVS,CMDVS)                       P0631510
      MCFVI = MCEVI + 10                                                P0631520
      WRITE (NUVI,0639) MCFVI                                           P0631530
      WRITE (NUVI,0633)                                                 P0631540
C*****    TEST OF DMIN1 - DOUBLE PRECISION ARGUMENTS, FUNCTION   8.2/28P0631550
C*****    TWO-ARGUMENT TEST FOR DMIN1                                   P0631560
      WRITE (NUVI,0638)                                                 P0631570
      MCAVD = 61.1234D0                                                 P0631580
      MCBVD = 2.0D1                                                     P0631590
      MCCVD = -999.009D-1                                               P0631600
      MCDVD = -1.9D0                                                    P0631610
      MCEVD = DMIN1(MCAVD,MCBVD)                                        P0631620
      MCFVD = MCEVD - 2.0D1                                             P0631630
      WRITE (NUVI,9996) MCFVD                                           P0631640
      MCEVD = DMIN1(MCCVD,MCDVD)                                        P0631650
      MCFVD = MCEVD + 999.009D-1                                        P0631660
      WRITE (NUVI,9996) MCFVD                                           P0631670
      MCEVD = DMIN1(MCAVD,MCDVD)                                        P0631680
      MCFVD = MCEVD + 1.9D0                                             P0631690
      WRITE (NUVI,9996) MCFVD                                           P0631700
      MCGVI = 2                                                         P0631710
      WRITE (NUVI,0632) MCGVI                                           P0631720
C*****    THREE-ARGUMENT TEST FOR DMIN1                                 P0631730
      MCEVD = DMIN1(MCAVD,MCBVD,MCDVD)                                  P0631740
      MCFVD = MCEVD + 1.9D0                                             P0631750
      WRITE (NUVI,9996) MCFVD                                           P0631760
      MCEVD = DMIN1(MCAVD,MCCVD,MCBVD)                                  P0631770
      MCFVD = MCEVD + 999.009D-1                                        P0631780
      WRITE (NUVI,9996) MCFVD                                           P0631790
      MCGVI = 3                                                         P0631800
      WRITE (NUVI,0632) MCGVI                                           P0631810
C*****    FOUR OR FIVE-ARGUMENT TEST FOR DMIN1                          P0631820
      MCEVD = DMIN1(MCAVD,MCCVD,MCBVD,MCDVD)                            P0631830
      MCFVD = MCEVD + 999.009D-1                                        P0631840
      WRITE (NUVI,9996) MCFVD                                           P0631850
      MCEVD = DMIN1(MCBVD,MCAVD,MCBVD,MCDVD,MCCVD)                      P0631860
      MCFVD = MCEVD + 999.009D-1                                        P0631870
      WRITE (NUVI,9996) MCFVD                                           P0631880
      WRITE (NUVI,0633)                                                 P0631890
      WRITE (NUVI,9997)                                                 P0631900
0631  FORMAT ( F11.1)                                                   P0631910
0632  FORMAT( 15X, 8H  END DF,I2,15H-ARGUMENT TEST.)                    P0631920
0633  FDRMAT (  15X, 30H  END OF 4 DR 5-ARGUMENT TEST.)                 P0631930
0634  FORMAT ( /16H  TEST OF AMIN1 )                                    P0631940
0635  FORMAT ( /16H  TEST DF AMIN0 )                                    P0631950
0636  FORMAT ( /16H  TEST OF MIN0   )                                   P0631960
0637  FORMAT (  16H1 TEST OF MIN1   )                                   P0631970
0638  FORMAT ( /16H  TEST OF DMIN1 )                                    P0631980
0639  FORMAT ( I10)                                                     P0631990
9996  FORMAT ( D22.10)                                                  P0632000
9997  FORMAT ( /39H  THE ABOVE ANSWERS SHOULD ALL BE 0 FOR/1X,          P0632010
     1 36H THIS TEST SEGMENT TD BE SUCCESSFUL.)                         P0632020
C*****   END DF TEST SEGMENT 063                                        P0632030
C*****  WHEN EXECUTING ONLY SEGMENT 063, THE  STDP  AND  END  CARDS     P0632040
C*****  WHICH APPEAR AS CDMMENT CARDS MUST HAVE THE  C=                 P0632050
C*****  IN CDLUMNS  1  AND  2  REMDVED.                                 P0632060
C=    STDP                                                              P0632070
C=    END                                                               P0632080
      STDP                                                              P063C1
      END                                                               P063C2
C***********************************************************************P0640010
C*****                                                                  P0640020
C*****                       IFDSG - (064)                              P0640030
C*****                                                                  P0640040
C***********************************************************************P0640050
C*****  GENERAL PURPOSE                                         ASA REF P0640060
C*****    TEST INTRINSIC FUNCTIDN DSIGN (TRANSFER OF SIGN WITH    8.2/33P0640070
C*****    DDUBLE PRECISION ARGUMENTS AND FUNCTION)             (TABLE 3)P0640080
C*****                                                                  P0640090
C*****  S P E C I F I C A T I O N S  SEGMENT 064                        P0640100
C*****                                                                  P0011490
C*****  WHEN EXECUTING DNLY SEGMENT 064, THE SPECIFICATION STATEMENTS   P0011495
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0011500
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0011505
C*****                                                                  P0011510
C=    DDUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P0011515
      DDUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD             P064A1
C*****                                                                  P0011520
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C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0640110
C*****                                                                  P0071250
C*****  WHEN EXECUTING ONLY SEGMENT 064, THE FOLLOWING STATEMENT        P0071255
C*****  NUVI = 6  MUST HAVE THE  C= IN COLUMNS 1 AND 2 REMOVED.         P0071260
C*****                                                                  P0071265
C=    NUVI = 6                                                          P0071270
      NUVI = 6                                                          P064B1
C*****                                                                  P0071275
      WRITE (NUVI,0640)                                                 P0640120
0640  FORMAT (1H1,1X,34HIFDSG - (064) INTRINSIC FUNCTION--/16X,24HDSIGN P0640130
     1(TRANSFER OF SIGN)/ 2X,14HASA REF. - 8.2//2X,7HRESULTS)           P0640140
C*****    HEADER FOR SEGMENT 064 WRITTEN                                P0640150
      MCAVD = +9.5D0                                                    P0640160
      MCBVD = 123.4567D1                                                P0640170
      MCCVD = -5.665D1                                                  P0640180
      MCDVD = -75.57D-0                                                 P0640190
      MCEVD = DSIGN(MCAVD,MCBVD)                                        P0640200
      MCFVD = MCEVD - 9.5D0                                             P0640210
      WRITE (NUVI,0641) MCFVD                                           P0640220
      MCEVD = DSIGN(MCBVD,MCCVD)                                        P0640230
      MCFVD = MCEVD + 123.4567D1                                        P0640240
      WRITE (NUVI,0641) MCFVD                                           P0640250
      MCEVD = DSIGN(MCCVD,MCDVD)                                        P0640260
      MCFVD = MCEVD + 5.665D1                                           P0640270
      WRITE (NUVI,0641) MCFVD                                           P0640280
      MCEVD = DSIGN(MCDVD,MCDVD)                                        P0640290
      MCFVD = MCEVD +75.57D0                                            P0640300
      WRITE (NUVI,0641) MCFVD                                           P0640310
      WRITE (NUVI,0642)                                                 P0640320
0641  FORMAT (1H0,D30.18)                                               P0640330
0642  FORMAT (1H0,1X,38HALL ABOVE ANSWERS SHOULD BE 0 FOR THIS/         P0640340
     12X,30HTEST SEGMENT TO BE SUCCESSFUL.)                             P0640350
C*****    END OF TEST SEGMENT 064                                       P0640360
C*****  WHEN EXECUTING ONLY SEGMENT 064, THE  STOP  AND  END  CARDS     P0640370
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0640380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0640390
C=    STOP                                                              P0640400
C=    END                                                               P0640410
      STOP                                                              P064C1
      END                                                               P064C2
C***********************************************************************P0650010
C*****                                                                  P0650020
C*****                       IFDIM - (065)                              P0650030
C*****                                                                  P0650040
C***********************************************************************P0650050
C*****  GENERAL PURPOSE                                         ASA REF P0650060
C*****    TEST INTRINSIC FUNCTION DIM AND IDIM--POSITIVE          8.2   P0650070
C*****    DIFFERENCE, WHICH IS DEFINED AS A1 - MIN(A1,A2)      (TABLE 3)P0650080
C*****                                                                  P0650090
C*****  NO  S P E C I F I C A T I O N S  SEGMENT 065                    P0650100
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0650110
C*****  WHEN EXECUTING ONLY SEGMENT 065, THE FOLLOWING STATEMENT        P0071280
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0071285
C*****                                                                  P0071290
C=    NUVI = 6                                                          P0071295
      NUVI = 6                                                          P065B1
      WRITE (NUVI,0650)                                                 P0650120
0650  FORMAT (1H1,1X,39HIFDIM - (065) INTRINSIC FUNCTIONS - DIM/12X,    P0650130
     130HAND IDIM (POSITIVE DIFFERENCE)/ 2X,14HASA REF. - 8.2/          P0650140
     22/2X,7HRESULTS)                                                   P0650150
C*****    HEADER FOR SEGMENT 065 WRITTEN                                P0650160
C*****    TEST OF DIM - -EAL ARGUMENTS, REAL FUNCT+ON              C2/34P0650170
      CMAVS = -4.0                                                      P0650180
      CMBVS = 4.0                                                       P0650190
      CMCVS = 16.25                                                     P0650200
      CMDVS = -64.25                                                    P0650210
      CMEVS = DIM(CMAVS,CMBVS)                                          P0650220
      CMFVS = CMEVS + 0.0                                               P0650230
      WRITE (NUVI,0651) CMFVS                                           P0650240
      CMEVS = DIM(CMCVS,CMDVS)                                          P0650250
      CMFVS = CMEVS - 80.5                                              P0650260
      WRITE (NUVI,0651) CMFVS                                           P0650270
      CMEVS = OIM(CMCVS,CMBVS)                                          P0650280
      CMFVS = CMEVS - 12.25                                             P0650290
      WRITE (NUVI,0651) CMFVS                                           P0650300
      CMEVS = DIM(CMDVS,CMAVS)                                          P0650310
      CMFVS = CMEVS - 0.0                                               P0650320
      WRITE (NUVI,0651) CMFVS                                           P0650330
C*****    TEST OF IDIM - INTEGER ARGUMENTS, INTEGER FUNCTION      8.2/35P0650340
      MCAVI = 02468                                                     P0650350
      MCBVI = +36                                                       P0650360
      MCCVI = -3                                                        P0650370
      MCOVI = -23                                                       P0650380
      MCEVI = IDIM(MCAVI,MCBVI)                                         P0650390
      MCFVI = MCEVI - 2432                                              P0650400
      WRITE (NUVI,0652) MCFVI                                           P0650410
      MCEVI = IOIM(MCBVI,MCCVI)                                         P0650420
      MCFVI = MCEVI - 39                                                P0650430
      WRITE (NUVI,0652) MCFVI                                           P0650440
      MCEVI = IDIM(MCOVI,MCCVI)                                         P0650450
      MCFVI = MCEVI + 0                                                 P0650460
      WRITE (NUVI,0652) MCFVI                                           P0650470
      MCEVI = IDIM(MCCVI,MCCVI)                                         P0650480
      WRITE (NUVI,0652) MCEVI                                           P0650490
      MCEVI = IDIM(MCCVI,MCBVI)                                         P0650500
      WRITE (NUVI,0652) MCEVI                                           P0650510
      WRITE (NUVI,0653)                                                 P0650520
0651  FORMAT (1H0,F17.2)                                                P0650530
0652  FORMAT (1H0,10X,I5)                                               P0650540
0653  FORMAT (1H0,1X,34H ALL ABOVE ANSWERS SHOULD BE 0 FOR/2X,          P0650550
     135HTHIS TEST SEGMENT TO BE SUCCESSFUL.)                           P0650560
C*****    END OF TEST SEGMENT 065                                       P0650570
C*****  WHEN EXECUTING ONLY SEGMENT 065 THE STOP ANO ENO CAROS          P0650580
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0650590
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P0650600
C=    STOP                                                              P0650610
C=    END                                                               P0650620
      STOP                                                              P065C1
      END                                                               P065C2
C***********************************************************************P0660010
C*****                                                                  P0660020
C*****                       IFSGL - (066)                              P0660030
C*****                                                                  P0660040
C***********************************************************************P0660050
C*****  GENERAL PURPOSE                                         ASA REF P0660060
C*****    TEST INTRINSIC FUNCTION SNGL - OBTAIN MOST SIGNIFICANT  8.2/36P0660070
C*****    PART OF DOUBLE PRECISION ARGUMENT.                   (TABLE 3)P0660080
C*****  GENERAL COMMENTS                                                P0660090
C*****    ASSIGNEO GO TO STATEMENT ASSUMED WORKING.                     P0660100
C*****                                                                  P0660110
C*****  S P E C I F I C A T I O N S  SEGMENT 066                        P0660120
C*****                                                                  P0011530
C*****  WHEN EXECUTING ONLY SEGMENT 066, THE SPECIFICATION STATEMENTS   P0011535
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011540
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011545
C*****                                                                  P0011550
C=    DOUBLE PRECISION MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVO,             P0011555
C=   1                 CMAVD, CMBVD,CMCVD                               P0011560
      OOUBLE PRECISION MCAVO,MCBVD,MCCVD,MCDVO,MCEVO,MCFVO,             P066A1
     1                 CMAVO, CMBVO,CMCVO                               P066A2
C*****                                                                  P0011565
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0660130
C*****                                                                  P0071300
C*****  WHEN EXECUTING ONLY SEGMENT 066, THE FOLLOWING STATEMENT        P0071305
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVEO.          P0071310
C=    NUVI = 6                                                          P0071315
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      NUVI = 6                                                          P066B1
C*****                                                                  P0071320
      WRITE (NUVI, 0660)                                                P0660140
0660  FORMAT (1H1,1X,39HIFSGL - (066) INTRINSIC FUNCTION SNGL--/16X,    P0660150
     126HOBTAIN MOST SIGNIFICANT PT/16X,                                P0660160
     218H OF O.P. ARGUMENT. //2X,15HASA REFS. - 8.2//2X,7HRESULTS)      P0660170
C*****     HEAOER FOR SEGMENT 066 WRITTEN                               P0660180
      MCAVD = .48748748748748D3+.57D-5+.56046450-6+.31786509547D-7      P0660190
      MCBVD =-39.689539609539D1-.570-5-.56046450-6-.31786509547D-7      P0660200
      MCCVO = .3333333333333300+.57D-5+.56046450-6+.317865095470-7      P0660210
      MCOVO =-.6666666666666600-.570-5+.5604645D-6-.317865095470-7      P0660220
      MCEVD = .48748748748748D3+.57D-5+.56046450-6+.317865095470-7      P0660230
      MCFVD = -39.6895396095390+1                                       P0660240
      AVS   = 0.0                                                       P0660250
      BVS   = 0.0                                                       P0660260
      CVS   = 0.0                                                       P0660270
      IVI   = 2                                                         P0660280
C*****  EXPRESSION RESULTS ASSIGNEO TO O.P. RESULT FOR VISUAL COMPARISONP0660290
C*****  ARGUMENTS OF SNGL - VARIABLE, SIMPLE EXPRESSION                 P0660300
      CMAVD = AVS + SNGL(MCAVD) - BVS                                   P0660310
      WRITE (NUVI,661) MCAVO,CMAVD                                      P0660320
      CMAVO = CVS + SNGL(MCBVD) + AVS                                   P0660330
      WRITE (NUVI,661) MCBVO, CMAVO                                     P0660340
      CMAVO = SNGL(MCCVO)                                               P0660350
      WRITE (NUVI,661) MCCVO,CMAVO                                      P0660360
      CMBVO = -MCBVO                                                    P0660370
      CMAVO = -SNGL(MCBVO - CMBVD)                                      P0660380
      CMCVO = - (MCBVD + MCBVO)                                         P0660390
      WRITE (NUVI,661) CMCVO,CMAVO                                      P0660400
      CMCVO = MCDVD * MCDVO                                             P0660410
      CMAVO = BVS + SNGL(MCOVO**IVI) + CVS                              P0660420
      WRITE (NUVI,661) CMCVO, CMAVO                                     P0660430
C*****  ARGUMENT OF SNGL - INTRINSIC FUNCTION WITH DIFFERENT NO. OF ARG P0660440
      CMAVO = -(CVS + SNGL(DABS(MCDVO)) + BVS)                          P0660450
      WRITE (NUVI,661) MCDVO, CMAVD                                     P0660460
      CMAVO = AVS - BVS + SNGL(OMIN1(MCEVO,MCFVO))                      P0660470
      WRITE (NUVI,661) MCFVO, CMAVO                                     P0660480
      CMAVO = CVS + BVS + SNGL(OMAX1(MCCVO,MCEVD,MCFVD))                P0660490
      WRITE (NUVI,661) MCEVO, CMAVO                                     P0660500
      WRITE (NUVI, 662)                                                 P0660510
661   FORMAT(1H0,1X,6HLINE A,025.14/2X,6HLINE B,025.14)                 P0660520
662   FORMAT(33H0 LINE B SHOULO AGREE WITH LINE A /40H  ONLY TO THE PRECP0660530
     AISION OF A REAL OATUM. /37H  REMAINING OIGITS RESULT FROM OUTPUT /P0660540
     B 33H  CONVERSION WHEN A REAL VALUE IS / 32H  ASSIGNED TO D.P. FOR P0660550
     CPRINTING. )                                                       P0660560
C*****     ENO OF SEGMENT 066                                           P0660570
C*****  WHEN EXECUTING ONLY SEGMENT 066, THE STOP AND END CARDS         P0660580
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE  C= IN COLUMNS      P0660590
C*****  1  ANO  2  REMOVED.                                             P0660600
C=    STOP                                                              P0660610
C=    ENO                                                               P0660620
      STOP                                                              P066C1
      ENO                                                               P066C2
C***********************************************************************P0670010
C*****                                                                  P0670020
C*****                      IFREL - (067)                               P0670030
C*****                                                                  P0670040
C***********************************************************************P0670050
C*****  GENERAL PURPOSE                                         ASA REF P0670060
C*****     TEST INTRINSIC FUNCTION REAL (OBTAIN REAL PART OF      8.2/39P0670070
C*****     COMPLEX ARGUMENT ).                                 (TABLE 3)P0670080
C*****                                                                  P0670090
C*****  S P E C I F I C A T I O N S  SEGMENT 067                        P0670100
C*****                                                                  P0011570
C*****  WHEN EXECUTING ONLY SEGMENT 067, THE SPECIFICATION STATEMENTS   P0011575
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C=                  P0011580
C*****  IN COLUMNS  1  AND  2  REMOVEO.                                 P0011585
C*****                                                                  P0011590
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C=    COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC                       P0011595
      COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC                       P067A1
C*****                                                                  P0011600
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0670110
C*****                                                                  P0071330
C*****  WHEN EXECUTING ONLY SEGMENT 067, THE FOLLOWING STATEMENT        P0071335
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071340
C=    NUVI = 6                                                          P0071345
      NUVI = 6                                                          P067B1
C*****                                                                  P0071350
      WRITE (NUVI,0670)                                                 P0670120
0670  FORMAT (1H1,1X,34HIFREL - (067) INTRINSIC FUNCTION--/ 16X, 4HREAL/P0670130
     1 2X,14HASA REF. - 8.2//                                           P0670140
     2 2X,7HRESULTS)                                                    P0670150
C*****    HEADER FOR SEGMENT 067 WRITTEN                                P0670160
      CHAVC = (3.2,1.86)                                                P0670170
      CHBVC = (2.1,0.0)                                                 P0670180
      CHCVC = (3.7,-1.2)                                                P0670190
      CHDVC = (+45.1,+2.2)                                              P0670200
      CHEVC = (-16.0, 0.0)                                              P0670210
      CHFVC = (-32.0, -1.1)                                             P0670220
      CMAVS = REAL(CHAVC)                                               P0670230
      CMBVS = CMAVS - 3.2                                               P0670240
      CMAVS = REAL(CHBVC)                                               P0670250
      CMCVS = CMAVS - 2.1                                               P0670260
      CMAVS = REAL(CHCVC)                                               P0670270
      CMDVS = CMAVS - 3.7                                               P0670280
      CMAVS = REAL(CHDVC)                                               P0670290
      CMEVS = CMAVS - 45.1                                              P0670300
      CMAVS =  ABS(REAL(CHEVC) + REAL(CHFVC))                           P0670310
      CMFVS = CMAVS - 48.0                                              P0670320
      CMAVS = AMAX1(REAL(CHAVC),REAL(CHBVC), REAL(CHEVC-CHFVC))         P0670330
      CMGVS = CMAVS - 16.0                                              P0670340
      WRITE (NUVI,0671) CMBVS,CMCVS,CMDVS,CMEVS,CMFVS,CMGVS             P0670350
C*****    REAL CONSTANTS HAVING ONLY FRACTIONAL PARTS(NO EXPONENT)      P0670360
      CHAVC = (.789,.12)                                                P0670370
      CHBVC = (.13,1.2)                                                 P0670380
      CHCVC = (.507,-2.2)                                               P0670390
      CHDVC = (+.5401,+.5)                                              P0670400
      CHEVC = (-.5,0.25)                                                P0670410
      CHFVC = (-.0625, 1.1)                                             P0670420
      CMAVS = REAL(CHAVC)                                               P0670430
      CMBVS = CMAVS - .789                                              P0670440
      CMAVS = REAL(CHBVC)                                               P0670450
      CMCVS = CMAVS -0.13                                               P0670460
      CMAVS = REAL(CHCVC)                                               P0670470
      CMDVS = CMAVS -0.507                                              P0670480
      CMAVS = REAL(CHDVC)                                               P0670490
      CMEVS = CMAVS -0.5401                                             P0670500
      CMAVS = REAL(CHEVC+CHFVC)                                         P0670510
      CMFVS = CMAVS  + 0.5625                                           P0670520
      CMAVS = REAL(CHEVC) - REAL(CHFVC)                                 P0670530
      CMGVS = CMAVS + 0.4375                                            P0670540
      WRITE (NUVI,0671) CMBVS,CMCVS,CMDVS,CMEVS,CMFVS,CMGVS             P0670550
C*****    REAL CONSTANTS HAVING ONLY INTEGRAL PARTS(NO EXPONENT)        P0670560
C*****                                                        5.1.1.2/22P0670570
      CHAVC = (23.,0.1)                                                 P0670580
      CHBVC = (12.,+1.2)                                                P0670590
      CHCVC = (1.,-2.3)                                                 P0670600
      CHDVC = (+45.,+.6)                                                P0670610
      CHEVC = (19.0, 1.0)                                               P0670620
      CHFVC = (-32.0, 2.0)                                              P0670630
      CMAVS = REAL(CHAVC)                                               P0670640
      CMBVS = CMAVS - 23.0                                              P0670650
      CMAVS = REAL(CHBVC)                                               P0670660
      CMCVS = CMAVS - 12.0                                              P0670670
      CMAVS = REAL(CHCVC)                                               P0670680
      CMDVS = CMAVS - 1.0                                               P0670690
      CMAVS = REAL(CHDVC)                                               P0670700
      CMEVS = CMAVS - 45.0                                              P0670710
      CMAVS = SIGN(DIM(REAL(CHEVC),REAL(CHFVC)),REAL(CHFVC))            P0670720
      CMFVS = CMAVS + 51.0                                              P0670730
      CMAVS = REAL((16.0,1.0) + CHEVC + CHFVC)                          P0670740
      CMGVS = CMAVS - 3.0                                               P0670750
      WRITE (NUVI,0671) CMBVS,CMCVS,CMDVS,CMEVS,CMFVS,CMGVS             P0670760
      WRITE (NUVI,0672)                                                 P0670770
0671  FORMAT (/6(F20.4/))                                               P0670780
0672  FORMAT ( /40H  ALL ABOVE ANSWERS SHOULD BE 0 FOR THIS /           P0670790
     132H  TEST SEGMENT TO BE SUCCESSFUL.)                              P0670800
C*****    END OF TEST SEGMENT 067                                       P0670810
C*****  WHEN EXECUTING ONLY SEGMENT 067, THE  STOP  AND  END  CARDS     P0670820
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0670830
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0670840
C=    STOP                                                              P0670850
C=    END                                                               P0670860
      STOP                                                              P067C1
      END                                                               P067C2
C***********************************************************************P0680010
C*****                                                                  P0680020
C*****                        IFIMG - (068)                             P0680030
C*****                                                                  P0680040
C***********************************************************************P0680050
C*****  GENERAL PURPOSE                                         ASA REF P0680060
C*****    TEST INTRINSIC FUNCTION AIMAG (OBTAIN IMAGINARY PART    8.2/41P0680070
C*****    OF COMPLEX ARGUMENT )                                (TABLE 3)P0680080
C*****                                                                  P0680090
C*****  S P E C I F I C A T I O N S  SEGMENT 068                        P0680100
C*****                                                                  P0011610
C*****  WHEN EXECUTING ONLY SEGMENT 068, THE SPECIFICATION STATEMENTS   P0011615
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011620
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011625
C*****                                                                  P0011630
C=    COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC,CHGVC,CHHVC,CHIVC,    P0011635
C=   1CHJVC,CHKVC,CHLVC                                                 P0011640
      COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC,CHGVC,CHHVC,CHIVC,    P068A1
     1CHJVC,CHKVC,CHLVC                                                 P068A2
C*****                                                                  P0011645
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0680110
C*****                                                                  P0071360
C*****  WHEN EXECUTING ONLY SEGMENT 068, THE FOLLOWING STATEMENT        P0071365
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071370
C=    NUVI = 6                                                          P0071375
      NUVI = 6                                                          P068B1
C*****                                                                  P0071380
      WRITE (NUVI,0680)                                                 P0680120
0680  FORMAT (1H1,1X,40HIFIMG - (068) INTRINSIC FUNCTION - AIMAG/16X,   P0680130
     119HOBTAIN IMAGINARY PT/16X,19HOF COMPLEX ARGUMENT/ 2X,            P0680140
     213HASA REF.- 8.2//2X,7HRESULTS)                                   P0680150
C*****    HEADER FOR SEGMENT 068 WRITTEN                                P0680160
C*****    IMAGINARY PARTS OF COMPLEX NUMBERS HAVING BOTH INTEGRAL       P0680170
C*****    AND FRACTIONAL PARTS. (NO EXPONENT)                           P0680180
      CHAVC = (3.2,1.86)                                                P0680190
      CHBVC = (2.1,0.0)                                                 P0680200
      CHCVC = (37.0,-1.2)                                               P0680210
      CHDVC = (+45.1,+2.2)                                              P0680220
      CMAVS = AIMAG(CHAVC)                                              P0680230
      CMBVS = CMAVS - 1.86                                              P0680240
      CMAVS = AIMAG(CHBVC)                                              P0680250
      CMCVS = CMAVS - 0.0                                               P0680260
      CMAVS = AIMAG(CHCVC)                                              P0680270
      CMDVS = CMAVS + 1.2                                               P0680280
      CMAVS = AIMAG(CHDVC)                                              P0680290
      CMEVS = CMAVS -2.2                                                P0680300
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0680310
C*****    IMAGINARY PARTS OF COMPLEX NUMBERS HAVING ONLY FRACTIONAL     P0680320
C*****    PARTS (NO EXPONENT)                                           P0680330
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      CHAVC = (.789,.00)                                                P0680340
      CHBVC = (1.2,.789)                                                P0680350
      CHCVC = (+4.56,-.456)                                             P0680360
      CHDVC = (-12.3,+.001)                                             P0680370
      CMAVS = AIMAG(CHAVC)                                              P0680380
      CMBVS = CMAVS - 0.0                                               P0680390
      CMAVS = AIMAG(CHBVC)                                              P0680400
      CMCVS = CMAVS - .789                                              P0680410
      CMAVS = AIMAG(CHCVC)                                              P0680420
      CMDVS = CMAVS + .456                                              P0680430
      CMAVS = AIMAG(CHDVC)                                              P0680440
      CMEVS = CMAVS - 0.001                                             P0680450
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0680460
C*****    IMAGINARY PARTS OF COMPLEX NUMBERS HAVING ONLY INTEGRAL       P0680470
C*****    PARTS (NO EXPONENT)                                           P0680480
      CHAVC =(-12.,12.)                                                 P0680490
      CHBVC = (+1.23,0.)                                                P0680500
      CHCVC = (0.0, -16.0)                                              P0680510
      CHDVC = (-1.1, -32.0)                                             P0680520
      CMAVS = AIMAG(CHAVC)                                              P0680530
      CMBVS = CMAVS - 12.0                                              P0680540
      CMAVS = AIMAG(CHBVC)                                              P0680550
      CMCVS = CMAVS + 0.0                                               P0680560
      CMAVS = ABS(AIMAG(CHCVC)+AIMAG(CHDVC))                            P0680570
      CMDVS = CMAVS - 48.0                                              P0680580
      CMAVS = AMAX1(AIMAG(CHAVC), AIMAG(CHBVC), AIMAG(CHCVC-CHDVC))     P0680590
      CMEVS = CMAVS - 16.0                                              P0680600
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0680610
C*****    IMAGINARY PARTS OF COMPLEX NUMBERS HAVING A DECIMAL EXPONENT. P0680620
      CHAVC = (2.3E0,1.2E0)                                             P0680630
      CHBVC = (1.2,.56E2)                                               P0680640
      CHCVC = (.24,1.E1)                                                P0680650
      CHDVC = (1.,+7.8E+1)                                              P0680660
      CHEVC = (1.5, 16.0)                                               P0680670
      CHFVC = (1.0, -32.0)                                              P0680680
      CHGVC = (1.E0,-7.99E-1)                                           P0680690
      CHHVC = (27.00,.55E-1)                                            P0680700
      CHIVC = (1.E0,2.E-0)                                              P0680710
      CHJVC = (1.2,1.E+1)                                               P0680720
      CHKVC = (1.E-1,+7.E0)                                             P0680730
      CHLVC = (1.7,-99.E-1)                                             P0680740
      CMAVS = AIMAG(CHAVC)                                              P0680750
      CMBVS = CMAVS - 1.2E0                                             P0680760
      CMAVS = AIMAG(CHBVC)                                              P0680770
      CMCVS = CMAVS - .56E2                                             P0680780
      CMAVS = AIMAG(CHCVC)                                              P0680790
      CMDVS = CMAVS - 1.E1                                              P0680800
      CMAVS = AIMAG(CHDVC)                                              P0680810
      CMEVS = CMAVS - 7.8E+1                                            P0680820
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0680830
      CMAVS = SIGN(DIM(AIMAG(CHEVC),AIMAG(CHFVC)), AIMAG(CHFVC))        P0680840
      CMBVS = CMAVS + 48.0                                              P0680850
      CMAVS = AIMAG((1.0, 16.0) + CHEVC + CHFVC)                        P0680860
      CMCVS = CMAVS + 0.0                                               P0680870
      CMAVS = AIMAG(CHGVC)                                              P0680880
      CMDVS = CMAVS + 7.99E-1                                           P0680890
      CMAVS = AIMAG(CHHVC)                                              P0680900
      CMEVS = CMAVS - .55E-1                                            P0680910
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0680920
      CMAVS = AIMAG(CHIVC)                                              P0680930
      CMBVS = CMAVS - 2.E-0                                             P0680940
      CMAVS = AIMAG(CHJVC)                                              P0680950
      CMCVS = CMAVS - 1.E+1                                             P0680960
      CMAVS = AIMAG(CHKVC)                                              P0680970
      CMDVS = CMAVS - 7.E0                                              P0680980
      CMAVS = AIMAG(CHLVC)                                              P0680990
      CMEVS = CMAVS + 99.E-1                                            P0681000
      WRITE (NUVI,0681) CMBVS,CMCVS,CMDVS,CMEVS                         P0681010
      WRITE (NUVI,0682)                                                 P0681020
0681  FORMAT ( / 4(F20.5 / ))                                           P0681030
0682  FORMAT ( /40H  ALL ABOVE ANSWERS SHOULD BE 0 FOR THIS /           P0681040
     132H  TEST SEGMENT TO BE SUCCESSFUL.)                              P0681050
C*****    END OF TEST SEGMENT 068                                       P0681060
C*****  WHEN EXECUTING ONLY SEGMENT 068, THE  STOP  AND  END  CARDS     P0681070
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0681080
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0681090
C=    STOP                                                              P0681100
C=    END                                                               P0681110
      STOP                                                              P068C1
      END                                                               P068C2
C***********************************************************************P0690010
C*****                                                                  P0690020
C*****                       IFDBL - (069)                              P0690030
C*****                                                                  P0690040
C***********************************************************************P0690050
C*****  GENERAL PURPOSE                                         ASA REF P0690060
C*****    TEST INTRINSIC FUNCTION DBLE (EXPRESS S.P. ARGUMENT     8.2/43P0690070
C*****    IN DOUBLE PRECISION FORM )                           (TABLE 3)P0690080
C*****    INTRINSIC FUNCTIONS DABS,DSIGN,DMIN1,DMAX1,AMAX1              P0690090
C*****    ASSUMED WORKING.                                              P0690100
C*****                                                                  P0690110
C*****  S P E C I F I C A T I O N S  SEGMENT 069                        P0690120
C*****                                                                  P0011650
C*****  WHEN EXECUTING ONLY SEGMENT 069, THE SPECIFICATION STATEMENTS   P0011655
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011660
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011665
C*****                                                                  P0011670
C=    DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD,MCGVD       P0011675
      DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,MCDVD,MCEVD,MCFVD,MCGVD       P069A1
C*****                                                                  P0011680
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0690130
C*****                                                                  P0071390
C*****  WHEN EXECUTING ONLY SEGMENT 06 , THE FOLLOW+NG STATEMENT        P0071395
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071400
C=    NUVI = 6                                                          P0071405
      NUVI = 6                                                          P069B1
C*****                                                                  P0071410
      WRITE (NUVI,0690)                                                 P0690140
0690  FORMAT (1H1,1X,39HIFDBL - (069) INTRINSIC FUNCTION - DBLE/16X,    P0690150
     126HS.P. ARGUMENT IN D.P. FORM / 2X,13HASA REF.- 8.2//2X,7HRESULTS)P0690160
C*****    HEADER FOR SEGMENT 069 WRITTEN                                P0690170
      CMAVS = 0.9765625E-3                                              P0690180
      CMBVS = -.1953125E-2                                              P0690190
      CMCVS = .5859375E-2                                               P0690200
      CMDVS = -.1048576E+7                                              P0690210
      CMEVS = +114688.0                                                 P0690220
      MCAVD = 0.0D0                                                     P0690230
      MCBVD = MCAVD * DBLE(CMAVS)                                       P0690240
      MCCVD = DMIN1(DBLE(CMAVS),DBLE(CMEVS))                            P0690250
      MCDVD = MCAVD * MCBVD - DABS(DBLE(CMBVS))                         P0690260
      MCEVD = MCAVD - DSIGN(DBLE(CMCVS),DBLE(CMBVS))                    P0690270
      MCFVD = - DABS(DBLE(CMDVS)) + MCAVD                               P0690280
      MCGVD = DMAX1(DBLE(AMAX1(CMDVS,CMEVS)),MCBVD)                     P0690290
      WRITE(NUVI,691) CMAVS, MCCVD, CMBVS, MCDVD,                       P0690300
     1                CMCVS, MCEVD, CMDVS, MCFVD, CMEVS, MCGVD          P0690310
691   FORMAT(1H0,1X,6HLINE A, E18.7/ 8H  LINE B, D25.14)                P0690320
      WRITE(NUVI, 692)                                                  P0690330
692   FORMAT(1H0,38H A COMPARISON OF LINE A AGAINST LINE B /1X,         P0690340
     1 40H IS NEEDED TO CHECK THE VALIDITY OF TEST)                     P0690350
C*****    END OF TEST SEGMENT 069                                       P0690360
C*****  WHEN EXECUTING ONLY SEGMENT 069, THE STOP AND END CARDS         P0690370
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0690380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0690390
C=    STOP                                                              P0690400
C=    END                                                               P0690410
      STOP                                                              P069C1
      END                                                               P069C2
C***********************************************************************P0700010
C*****                                                                  P0700020
C*****                       IFCPX - (070)                              P0700030
C*****                                                                  P0700040
C***********************************************************************P0700050
C*****  GENERAL PURPOSE                                         ASA REF P0700060
C*****    TEST INTRINSIC FUNCTION CMPLX (EXPRESS TWO REAL         8.2/45P0700070
C*****    ARGUMENTS IN COMPLEX FORM)                           (TABLE 3)P0700080
C*****  GENERAL COMMENTS                                                P0700090
C*****    SUBTRACTION OF COMPLEX NUMBERS ASSUMED WORKING                P0700100
C*****                                                                  P0700110
C*****  S P E C I F I C A T I O N S  SEGMENT 070                        P0700120
C*****                                                                  P0011690
C*****  WHEN EXECUTING ONLY SEGMENT 070, THE SPECIFICATION STATEMENTS   P0011695
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011700
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011705
C*****                                                                  P0011710
C=    COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC,CHGVC                 P0011715
      COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC,CHGVC                 P070A1
C*****                                                                  P0011720
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0700130
C*****  WHEN EXECUTING ONLY SEGMENT 070, THE FOLLOWING STATEMENT        P0071420
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071425
C=    NUVI = 6                                                          P0071430
      NUVI = 6                                                          P070B1
      WRITE (NUVI,0700)                                                 P0700140
0700  FORMAT (1H1, 1X,40HIFCPX - (070) INTRINSIC FUNCTION - CMPLX/16X,  P0700150
     126HEXPRESS TWO REAL ARGUMENTS/16X,15HIN COMPLEX FORM/15H  ASA REF.P0700160
     2- 8.2//2X,7HRESULTS)                                              P0700170
C*****    HEADER FOR SEGMENT 070 WRITTEN                                P0700180
      CMAVS = 23.123                                                    P0700190
      CMBVS = -.78                                                      P0700200
      CMCVS = +17.                                                      P0700210
      CMDVS = 157.E-1                                                   P0700220
      CMEVS = -.985E1                                                   P0700230
      CMFVS = +88.E+0                                                   P0700240
      CHAVC = CMPLX(CMAVS,CMBVS)                                        P0700250
      CHBVC = CHAVC - (23.123,-.78)                                     P0700260
      CHAVC = CMPLX(CMBVS,15.0)                                         P0700270
      CHCVC = CHAVC - (-.78,15.0)                                       P0700280
      CHAVC = CMPLX(CMDVS,CMFVS)                                        P0700290
      CHDVC = CHAVC - (157.E-1,+88.E+0)                                 P0700300
      CHAVC =  CMPLX(0.0,0.E0)                                          P0700310
      CHEVC = CHAVC                                                     P0700320
      CHAVC = CMPLX(CMEVS,CMFVS)                                        P0700330
      CHFVC = CHAVC - (-.985E1,+88.E+0)                                 P0700340
      CHAVC = CMPLX(CMCVS,-0.0E-1)                                      P0700350
      CHGVC = CHAVC - (+17.0,0.0)                                       P0700360
      WRITE (NUVI,0702) CHBVC, CHCVC, CHDVC, CHEVC, CHFVC, CHGVC        P0700370
      WRITE (NUVI,0701)                                                 P0700380
0701  FORMAT   (//2X,37HTHE ABOVE ANSWERS SHOULD ALL BE 0 FOR/1X,       P0700390
     136H THIS TEST SEGMENT TO BE SUCCESSFUL.)                          P0700400
0702  FORMAT (6(/F17.7,F17.7))                                          P0700410
C*****    END OF TEST SEGMENT 070                                       P0700420
C*****  WHEN EXECUTING ONLY SEGMENT 070, THE  STOP  AND  END  CARDS     P0700430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0700440
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0700450
C=    STOP                                                              P0700460
C=    END                                                               P0700470
      STOP                                                              P070C1
      END                                                               P070C2
C***********************************************************************P0710010
C*****                                                                  P0710020
C*****                       IFCJG - (071)                              P0710030
C*****                                                                  P0710040
C***********************************************************************P0710050
C*****  GENERAL PURPOSE                                         ASA REF P0710060
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C*****    TEST INTRINSIC FUNCTION CONJG (OBTAIN CONJUGATE OF A    8.2/47P0710070
C*****    COMPLEX ARGUMENT)                                    (TABLE 3)P0710080
C*****  GENERAL COMMENTS                                                P0710090
C*****    SUBTRACTION OF COMPLEX NUMBERS ASSUMED WORKING                P0710100
C*****                                                                  P0710110
C*****  S P E C I F I C A T I O N S  SEGMENT 071                        P0710120
C*****                                                                  P0011730
C*****  WHEN EXECUTING ONLY SEGMENT 071, THE SPECIFICATION STATEMENTS   P0011735
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011740
C*****                                                                  P0011745
C=    COMPLEX  CHAVC, CHBVC, CHCVC, CHDVC ,CHEVC                        P0011750
      COMPLEX  CHAVC, CHBVC, CHCVC, CHDVC ,CHEVC                        P071A1
C*****                                                                  P0011755
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0710130
C*****                                                                  P0071440
C*****  WHEN EXECUTING ONLY SEGMENT 071, THE FOLLOWING STATEMENT        P0071445
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071450
C=    NUVI = 6                                                          P0071455
      NUVI = 6                                                          P071B1
C*****                                                                  P0071460
      WRITE (NUVI,0710)                                                 P0710140
0710  FORMAT (1H1, 1X,40HIFCJG - (071) INTRINSIC FUNCTION - CONJG/16X,  P0710150
     119HOBTAIN CONJUGATE OF/16X,16HA COMPLEX NUMBER/                   P0710160
     217H  ASA REFS. - 8.2//2X,7HRESULTS)                               P0710170
C*****    HEADER FOR SEGMENT 071 WRITTEN                                P0710180
      CHAVC = (1.1,+2.1)                                                P0710190
      CHBVC = CONJG(CHAVC)                                              P0710200
      CHCVC = CHBVC - (1.1,-2.1)                                        P0710210
      CHEVC = (-2.E0, -3.E-1)                                           P0710220
      CHBVC = CONJG(CHEVC)                                              P0710230
      CHDVC = CHBVC - (-2.E0,3.E-1)                                     P0710240
      WRITE (NUVI,0711) CHCVC, CHDVC                                    P0710250
      CHAVC = (-.2,+.3)                                                 P0710260
      CHBVC = CONJG(CHAVC)                                              P0710270
      CHCVC = CHBVC - (-.2,-.3)                                         P0710280
      CHAVC = (23.1E-1,1.E-2)                                           P0710290
      CHBVC = CONJG(CHAVC)                                              P0710300
      CHDVC = CHBVC - (23.1E-1,-1.E-2)                                  P0710310
      WRITE (NUVI,0711) CHCVC,CHDVC                                     P0710320
      CHBVC = CONJG((1.2,2.2))                                          P0710330
      CHCVC = CHBVC - (1.2,-2.2)                                        P0710340
      CHBVC = CONJG((-1.0,2.0E-1))                                      P0710350
      CHDVC = CHBVC - (-1.0,-2.0E-1)                                    P0710360
      WRITE (NUVI,0711) CHCVC, CHDVC                                    P0710370
      CHBVC = CONJG((.1,.2E0))                                          P0710380
      CHCVC = CHBVC - (.1,-.2E0)                                        P0710390
      CHDVC = CONJG((.0,-0.E0))                                         P0710400
      WRITE (NUVI,0711) CHCVC, CHDVC                                    P0710410
      WRITE (NUVI,0712)                                                 P0710420
0711  FORMAT (4(/  F17.7, F10.7))                                       P0710430
0712  FORMAT (//38H  ALL ABOVE ANSWERS MUST BE 0 FOR THIS/1X,           P0710440
     131H TEST SEGMENT TO BE SUCCESSFUL.)                               P0710450
C*****    END OF TEST SEGMENT 071                                       P0710460
C*****  WHEN EXECUTING ONLY SEGMENT 071, THE  STOP  AND  END  CARDS     P0710470
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0710480
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0710490
C=    STOP                                                              P0710500
C=    END                                                               P0710510
      STOP                                                              P071C1
      END                                                               P071C2
C***********************************************************************P0720010
C*****                                                                  P0720020
C*****                       IFBMS - (072)                              P0720030
C*****                                                                  P0720040
C***********************************************************************P0720050
C*****  GENERAL PURPOSE                                          ASA REF P0720060
C*****    TEST THAT ALL INTRINSIC FUNCTIONS WOULD ACCEPT          8.2/32P0720070
C*****    ANY EXPRESSION OF THE TYPE SPECIFIED IN THE          (TABLE 3)P0720080
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C*****    INTRINSIC FUNCTION TABLE - ASA REFS - 8.2/01-47               P0720090
C*****  GENERAL COMMENTS                                                P0720100
C*****    SEGMENTS 055 TO 071 ASSUMED WORKING                           P0720110
C*****                                                                  P0720120
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0720130
C*****                                                                  P0720140
C*****  WHEN EXECUTING ONLY SEGMENT 072, THE FOLLOWING STATEMENT        P0071470
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071475
C=    NUVI = 6                                                          P0071480
      NUVI = 6                                                          P072B1
C*****                                                                  P0071485
      WRITE (NUVI,0720)                                                 P0720150
0720  FORMAT (1H1,1X,37HIFBMS - (072) BASIC FORTRAN INTRINSIC/10X,      P0720160
     128HFUNCTIONS ACCEPT EXPRESSIONS/10X,30HOF TYPE SPECIFIED IN I.F.TAP0720170
     2BLE//15H  ASA REF.- 8.2//2X,7HRESULTS)                            P0720180
C*****    HEADER FOR SEGMENT 072 WRITTEN                                P0720190
C*****    TEST ABS - ABSOLUTE VALUE OF REAL ARGUMENT              8.2/11P0720200
      CMAVS = 0.5                                                       P0720210
      CMBVS = -.25                                                      P0720220
      CMCVS = 16.0                                                      P0720230
      CMDVS = -4.0                                                      P0720240
      CMEVS = ABS(CMAVS + CMBVS) + 1.0                                  P0720250
      CMFVS = CMEVS - (0.5 - .25) - 1.0                                 P0720260
      CMEVS = ABS(0.0 -ABS(CMAVS - CMCVS+ CMDVS))                       P0720270
      CMGVS = CMEVS + (0.5 - 16.0 - 4.0)                                P0720280
      CMEVS = ABS(CMAVS + 1.0 - (CMCVS + CMDVS) + 0.5 * 8.0)            P0720290
      CMHVS = CMEVS + (0.5 + 1.0 - (16.0 - 4.0) + 4.0)                  P0720300
      CMEVS = ABS(1.0E0 + (1.0 * 1.0 / 1.0) **2)                        P0720310
      CMIVS = CMEVS - 2.0                                               P0720320
      WRITE (NUVI,0721) CMFVS , CMGVS , CMHVS , CMIVS                   P0720330
C*****    TEST OF IABS - ABSOLUTE VALUE OF INTEGER ARGUMENT       8.2/12P0720340
      MCAVI = 2                                                         P0720350
      MCBVI = 10                                                        P0720360
      MCCVI = IABS (MCAVI + MCBVI)                                      P0720370
      MCDVI = MCCVI - 12                                                P0720380
      MCCVI = IABS(MCAVI * 2 + MCBVI / 2) +1                            P0720390
      MCEVI = MCCVI - 10                                                P0720400
      MCCVI = IABS(-MCBVI /(-2) - MCBVI ** 1 + (1 * 2 * 3 / 2 - 3) - 10 P0720410
     1 + 10 + MCBVI / MCAVI - 5)                                        P0720420
      MCFVI = MCCVI - 5                                                 P0720430
      MCCVI = IABS(0 - IABS(-5 * 1 / 5  - 5 * IABS(-1)))                P0720440
      MCGVI = MCCVI - 6                                                 P0720450
      WRITE (NUVI, 0722) MCDVI , MCEVI , MCFVI , MCGVI                  P0720460
C*****    TEST OF FLOAT - CONVERSION FROM INTEGER TO REAL         8.2/29P0720470
      CMEVS = FLOAT (MCAVI + MCBVI)                                     P0720480
      CMFVS = CMEVS - 12.0                                              P0720490
      CMEVS = FLOAT(MCAVI * 2 /4 + MCBVI ** 1)                          P0720500
      CMGVS = CMEVS - 11.0                                              P0720510
      CMEVS = FLOAT((23 + 46)/69 + 10 - MCBVI) *2.0 + 1.5               P0720520
      CMHVS = CMEVS - 3.5                                               P0720530
      CMEVS = (76.5 * 1.0 - FLOAT (76 * 1)) * 4.0                       P0720540
      CMIVS = CMEVS - 2.0                                               P0720550
      WRITE (NUVI,0723) CMFVS, CMGVS, CMHVS, CMIVS                      P0720560
C*****    TEST OF IFIX - CONVERSION FROM REAL TO INTEGER          8.2/30P0720570
      MCCVI = IFIX(CMAVS - CMBVS)                                       P0720580
      MCDVI = MCCVI                                                     P0720590
      MCCVI = IFIX(CMAVS *1.0 + CMBVS/CMBVS - (CMCVS - CMDVS))          P0720600
      MCEVI = MCCVI + 18                                                P0720610
      MCCVI = 1 + IFIX(2.5 * 2.0) - IFIX(10.0 /2.0)                     P0720620
      MCFVI = MCCVI - 1                                                 P0720630
      MCCVI = 2 + IFIX(2.5 ** 1.0 + (10.65 + 3.45))                     P0720640
      MCGVI = MCCVI - 18                                                P0720650
      WRITE (NUVI,0724) MCDVI, MCEVI, MCFVI, MCGVI                      P0720660
C*****    TEST OF SIGN - TRANSFER OF SIGN WITH REAL ARGUMENTS     8.2/31P0720670
      CMEVS = SIGN(CMAVS+CMDVS,CMDVS-CMBVS)                             P0720680
      CMFVS = CMEVS - (CMAVS + CMDVS)                                   P0720690
      CMEVS = SIGN(25.0 + 0.0 * 4.0,-24.4/6.1 * 1.0)                    P0720700
      CMGVS = CMEVS + 25.0                                              P0720710
      CMEVS = SIGN(10.5,SIGN(2.0,-4.5))                                 P0720720
      CMHVS = CMEVS + 10.5                                              P0720730
      CMEVS = SIGN(1.0,SIGN(-2.0,SIGN(2.0,-1.0)))                       P0720740
      CMIVS = CMEVS + 1.0                                               P0720750
      WRITE (NUVI,0725) CMFVS, CMGVS, CMHVS, CMIVS                      P0720760
C*****    TEST OF ISIGN - TRANSFER OF SIGN WITH INTEGER ARGUMENT  8.2/32P0720770
      MCCVI = ISIGN(MCAVI,MCAVI + MCBVI - 13)                           P0720780
      MCDVI = MCCVI + 2                                                 P0720790
      MCCVI = ISIGN(10,-5 - 10/2 + 1**2)                                P0720800
      MCEVI = MCCVI + 10                                                P0720810
      MCCVI = ISIGN( 1 + 2 + 3 , ISIGN(-2,7 + 5))                       P0720820
      MCFVI = MCCVI - 6                                                 P0720830
      MCCVI = ISIGN(1,ISIGN(-1,ISIGN(+1,-1)))                           P0720840
      MCGVI = MCCVI + 1                                                 P0720850
      WRITE (NUVI,0726) MCDVI, MCEVI, MCFVI, MCGVI                      P0720860
C*****    TEST OF COMBINATION OF ABS,IABS,FLOAT,IFIX,SIGN,ISIGN         P0720870
      CMEVS = FLOAT(IABS(IFIX(ABS(-5.0 + SIGN(-1.0,2.0)))))             P0720880
      CMFVS = CMEVS - 4.0                                               P0720890
      MCCVI = IFIX(FLOAT(ISIGN(1+2,IABS(1 + ISIGN(1,-1)))))             P0720900
      MCDVI = MCCVI - 3                                                 P0720910
      CMEVS = SIGN(ABS(1.0 + FLOAT(-20)), FLOAT(IFIX(1.0)))             P0720920
      CMGVS = CMEVS - 19.0                                              P0720930
      MCCVI = ISIGN(IABS(IFIX(1.0) - 2) , -((1 + IFIX(-1.0)) +1))       P0720940
      MCEVI = MCCVI + 1                                                 P0720950
      WRITE (NUVI,0727) CMFVS, CMGVS, MCDVI, MCEVI                      P0720960
      CMEVS = ABS(SIGN(1.0 + 2.0, FLOAT(IABS(-2))))                     P0720970
      CMFVS = CMEVS - 3.0                                               P0720980
      MCCVI = IABS(IFIX(SIGN(-2.0,2.0)))                                P0720990
      MCDVI = MCCVI - 2                                                 P0721000
      CMEVS = 1.2 + FLOAT(1 + 5 - ISIGN(-1,6))                          P0721010
      CMGVS = CMEVS - 6.2                                               P0721020
      MCCVI = 25 - ISIGN(IFIX(2.0),-IABS(-5))                           P0721030
      MCEVI = MCCVI - 27                                                P0721040
      WRITE (NUVI,0728) CMFVS, CMGVS, MCDVI, MCEVI                      P0721050
C*****    END OF TEST STATEMENTS                                        P0721060
0721  FORMAT ( / 30H  TEST OF ABS IN EXPRESSIONS -/ 4(F17.1/))          P0721070
0722  FORMAT (   31H  TEST OF IABS IN EXPRESSIONS -/ 4(I15/))           P0721080
0723  FORMAT (   32H  TEST OF FLOAT IN EXPRESSIONS -/ 4(F17.1/))        P0721090
0724  FORMAT (   31H  TEST OF IFIX IN EXPRESSIONS -/ 4(I15/))           P0721100
0725  FORMAT (   31H  TEST OF SIGN IN EXPRESSIONS -/ 4(F17.1/))         P0721110
0726  FORMAT (   32H  TEST OF ISIGN IN EXPRESSIONS -/ 4(I15/))          P0721120
0727  FORMAT (   40H  COMBINATION OF ALL INTRINSIC FUNCTIONS,           P0721130
     1  2(/F17.1), 2(/I15))                                             P0721140
0728  FORMAT (  2(F17.1/),2(I15/)/ 35H  ALL ABOVE ANSWERS SHOULD BE 0 FOP0721150
     1R/2X,35HTHIS TEST SEGMENT TO BE SUCCESSFUL.)                      P0721160
C*****    END OF TEST SEGMENT 072                                       P0721170
C*****  WHEN EXECUTING ONLY SEGMENT 072, THE  STOP  AND  END  CARDS     P0721180
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0721190
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0721200
C=    STOP                                                              P0721210
C=    END                                                               P0721220
      STOP                                                              P072C1
      END                                                               P072C2
C***********************************************************************P0730010
C*****                                                                  P0730020
C*****                       IFFMS - (073)                              P0730030
C*****                                                                  P0730040
C***********************************************************************P0730050
C*****  GENERAL PURPOSE                                         ASA REF P0730060
C*****    TEST THAT ALL INTRINSIC FUNCTIONS IN FORTRAN WOULD      8.2/07P0730070
C*****    ACCEPT ANY EXPRESSION OF THE TYPE SPECIFIED IN THE     (PG 24)P0730080
C*****    INTRINSIC FUNCTION TABLE - ASA REFS - 8.2/TABLE 3             P0730090
C*****    SEGMENTS 055 - 071 ASSUMED WORKING.                           P0730100
C*****                                                                  P0730110
C*****  S P E C I F I C A T I O N S  SEGMENT 073                        P0730120
C*****                                                                  P0011760
C*****  WHEN EXECUTING ONLY SEGMENT 073, THE SPECIFICATION STATEMENTS   P0011765
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011770
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C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011775
C*****                                                                  P0011780
C=    DIMENSION MCA1I(5),AC2S(5,6)                                      P0011785
C=    INTEGER MCA3I(2,3,3)                                              P0011790
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD,       P0011795
C=   1DPA1D(5),FC2D(5,5)                                                P0011800
      DIMENSION MCA1I(5),AC2S(5,6)                                      P073A1
      INTEGER MCA3I(2,3,3)                                              P073A2
      DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPGVD,       P073A3
     1DPA1D(5),FC2D(5,5)                                                P073A4
C*****                                                                  P0011805
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0730130
C*****                                                                  P0071490
C*****  WHEN EXECUTING ONLY SEGMENT 073, THE FOLLOWING STATEMENT        P0071495
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071500
C=    NUVI = 6                                                          P0071505
      NUVI = 6                                                          P073B1
C*****                                                                  P0071510
      WRITE (NUVI,0730)                                                 P0730140
0730  FORMAT (1H1,1X,41HIFFMS - (073) FORTRAN INTRINSIC FUNCTIONS/16X,  P0730150
     126HACCEPT EXPRESSIONS OF TYPE/16X,22HSPECIFIED IN I.F.TABLE/      P0730160
     223H  ASA REF.- 8.2/TABLE 3//2X,7HRESULTS)                         P0730170
C*****    HEADER FOR SEGMENT 073 WRITTEN                                P0730180
C*****    TEST OF DABS IN EXPRESSIONS                             8.2/13P0730190
      DPAVD = 1.25D0                                                    P0730200
      DPBVD = - 10.0D0                                                  P0730210
      DPCVD = DABS(DPAVD + DPBVD)                                       P0730220
      DPDVD = DPCVD - 10.0D0 + 1.25D0                                   P0730230
      DPCVD = DABS(1.0D0 + 2.D0 - 3.0D0 * 50.D-1)                       P0730240
      DPEVD = DPCVD - 12.D0                                             P0730250
      DPCVD = DABS( DPAVD * 1.D0 - 1.25D0 + DPBVD/2.D0) + 1.D0          P0730260
      DPFVD = DPCVD - 6.0D0                                             P0730270
      DPGVD = 1.0D0 + DABS(2.5D0 - 1.5D0 * 1.0D0) - 2.D0                P0730280
      WRITE (NUVI,0731) DPDVD, DPEVD, DPFVD, DPGVD                      P0730290
C*****    TEST OF AINT IN EXPRESSIONS                             8.2/14P0730300
      CMAVS = 1.23                                                      P0730310
      CMBVS = 27.998                                                    P0730320
      CMCVS = -9.007E0                                                  P0730330
      CMDVS = AINT(CMAVS + CMBVS - CMCVS)                               P0730340
      CMEVS = CMDVS - 38.0                                              P0730350
      CMDVS = AINT(1.0 + 2.0 /1.0 - 3.0 * 2.E0)                         P0730360
      CMFVS = CMDVS + 3.0                                               P0730370
      CMDVS = AINT(4. + AINT(2.E0 + CMCVS))                             P0730380
      CMGVS = CMDVS + 3.0                                               P0730390
      CMDVS = AINT(AINT(AINT( 1.4 - 2.7)))                              P0730400
      CMHVS = CMDVS + 1.0                                               P0730410
      WRITE (NUVI,0732) CMEVS, CMFVS, CMGVS, CMHVS                      P0730420
C*****    TEST OF INT IN EXPRESSIONS                              8.2/15P0730430
      MCAVI = INT(1.0 + 2.1 + 3.2 - 8.4 / 2.5 * 2.6)                    P0730440
      MCBVI = MCAVI + 2                                                 P0730450
      MCAVI = INT(100.0/6.0 - (2.0 **4.0) + (((2.0-3.0)+4.0) * 2.0))    P0730460
      MCCVI = MCAVI - 6                                                 P0730470
      MCAVI = INT((100.2/6.1/5.0+4.10) / 2.0)                           P0730480
      MCDVI = MCAVI - 3                                                 P0730490
      MCAVI = INT(9.0/2.0) + INT(5.1/4.0)                               P0730500
      MCEVI = MCAVI - 5                                                 P0730510
      WRITE (NUVI,0733) MCBVI, MCCVI, MCDVI, MCEVI                      P0730520
C*****    TEST OF IDINT IN EXPRESSIONS                            8.2/16P0730530
      DPA1D(1) = 2.5D1                                                  P0730540
      MCAVI = IDINT(DPBVD / 2.0D0 + 1.5D0)                              P0730550
      MCBVI = MCAVI + 3                                                 P0730560
      MCAVI = IDINT( 1.0D1 + 5.D0 * 2.D1 / 49.D1) + 1                   P0730570
      MCCVI = MCAVI - 11                                                P0730580
      MCAVI = IDINT(DPA1D(1))                                           P0730590
      MCDVI = MCAVI - 25                                                P0730600
      MCAVI = IDINT(DPA1D(1) + DPA1D(1)/4.0D0)                          P0730610
      MCEVI = MCAVI - 31                                                P0730620
      WRITE (NUVI,0734) MCBVI, MCCVI, MCDVI, MCEVI                      P0730630
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C*****    TEST OF AMOD, MOD IN EXPRESSIONS                     8.2/17-18P0730640
      AC2S(1,1) = 27.0                                                  P0730650
      CMDVS =AMOD(25.0 + AC2S(1,1), 1.0 * 5.0)                          P0730660
      CMEVS = CMDVS - 2.0                                               P0730670
      CMDVS =AMOD(99.0,AMOD(25.0+ 27.0, 5.0))                           P0730680
      CMFVS = CMDVS - 1.0                                               P0730690
      MCA3I(1,2,3) = 5                                                  P0730700
      MCAVI = MOD(98 + 1, MOD(25 + 27,5))                               P0730710
      MCBVI = MCAVI - 1                                                 P0730720
      MCAVI = MOD (MCA3I (1,2,3), 2)                                    P0730730
      MCCVI = MCAVI - 1                                                 P0730740
      WRITE (NUVI,0735) CMEVS, CMFVS, MCBVI, MCCVI                      P0730750
C*****    TEST OF AMAX0, AMAX1, MAX0, MAX1 AND DMAX1 IN EXPRESSIONS     P0730760
C*****                                                         8.2/19-23P0730770
      FC2D(1,1) = 27.0D0                                                P0730780
      CMDVS = AMAX0(5 + 9, MAX0(14 * 2, MAX1( 2.0 /1.0,1.0)))           P0730790
      CMEVS = CMDVS - 28.0                                              P0730800
      CMDVS = AMAX1((AMAX0((MAX0(29,-100)),5 + 10)), 2.0 * 2.0)         P0730810
      CMFVS = CMDVS - 29.0                                              P0730820
      MCAVI = MAX1((AMAX0(25, -(1 * 5))),100.0)                         P0730830
      MCBVI = MCAVI - 100                                               P0730840
      DPCVD = DMAX1(FC2D(1,1),DMAX1(1.0D0, 0.D0 * FC2D(1,1)))           P0730850
      DPDVD = DPCVD - 27.0D0                                            P0730860
      WRITE (NUVI,0736) CMEVS, CMFVS, MCBVI, DPDVD                      P0730870
C*****    TEST OF AMIN0, AMIN1, MIN0, MIN1 AND DMIN1 IN EXPRESSIONS     P0730880
C*****                                                         8.2/24-27P0730890
      CMDVS = AMIN1(2.5 + AC2S(1,1), AMIN0(-5, MIN0(0,1)))              P0730900
      CMEVS = CMDVS + 5.0                                               P0730910
      MCAVI = MIN0((MIN1( -99., 100.0 - 1.0 * 99.)), 2)                 P0730920
      MCBVI = MCAVI + 99                                                P0730930
      MCAVI = MIN1( 2.0,AMIN1( 5. * 3.0, -9.0 /(-9.0)))                 P0730940
      MCCVI = MCAVI - 1                                                 P0730950
      DPCVD = DMIN1(FC2D(1,1), DMIN1(2.0D-1,0.0D0))                     P0730960
      DPDVD = DPCVD - 0.0D0                                             P0730970
      WRITE (NUVI,0737) CMEVS, MCBVI, MCCVI, DPDVD                      P0730980
C*****    TEST OF DSIGN,AND DBLE IN EXPRESSIONS             8.2/33,8.2/43P0730990
      DPCVD= DSIGN(FC2D(1,1) * 1.0D1, - 1.0D0)                          P0731000
      DPDVD = DPCVD + 27.0D1                                            P0731010
      DPCVD = DSIGN((DSIGN(2.0D0, -1.0D0) + 0.0D0),  .0D0)              P0731020
      DPEVD = DPCVD - 2.0D0                                             P0731030
      DPCVD = DBLE( 2.0 * 4.0 + AC2S(1,1))                              P0731040
      DPFVD = DPCVD - 35.0D0                                            P0731050
      DPCVD = DBLE(-32.00 / 8.0) * DBLE(-2.0)                           P0731060
      DPGVD = DPCVD - 8.0D0                                             P0731070
      WRITE (NUVI,0738) DPDVD, DPEVD, DPFVD, DPGVD                      P0731080
C*****    TEST OF DIM AND IDIM IN EXPRESSIONS                  8.2/34-35P0731090
      CMDVS = DIM( 2.0 * 3.5 /7.0, AC2S(1,1))                           P0731100
      CMEVS = CMDVS - 0.0                                               P0731110
      CMDVS = DIM(DIM(9.0,-5.5), DIM(6.0,0.0))                          P0731120
      CMFVS = CMDVS - 8.5                                               P0731130
      MCA1I(1)=8                                                        P0731140
      MCCVI = IDIM(MCA1I(1) * 1, - (IDIM(0, -3)))                       P0731150
      MCDVI = MCCVI - 11                                                P0731160
      MCCVI = IDIM(((4 + 2 + 3)/3), - 2)                                P0731170
      MCEVI = MCCVI - 5                                                 P0731180
      WRITE (NUVI,9995) CMEVS, CMFVS, MCDVI, MCEVI                      P0731190
C*****    TEST OF SNGL, REAL , AIMAG, CMPLX AND CONJG IN EXPRESSIONS    P0731200
C*****                                                         8.2/36-47P0731210
      CMEVS = SNGL (1.0D0 * 2.D1 + AC2S(1,1))                           P0731220
      CMFVS = CMEVS - 47.0                                              P0731230
      CMEVS = REAL( CONJG((1.0, -2.0)))+ AIMAG((99.0, -7.0))            P0731240
      CMGVS = CMEVS + 6.0                                               P0731250
      CMEVS = AIMAG(CMPLX(REAL((2.0,1.0)), SNGL (1.0D0)))               P0731260
      CMHVS = CMEVS - 1.0D0                                             P0731270
      WRITE (NUVI,0739) CMFVS, CMGVS, CMHVS                             P0731280
C*****    SOME COMBINATIONS OF ABOVE INTRINSIC FUNCTIONS                P0731290
      CMEVS = AMIN1((FLOAT(IDIM(1+2,0))),(AIMAG(CMPLX(1.0,2.0))))       P0731300
      CMFVS = CMEVS - 2.0                                               P0731310
      CMEVS = REAL(CMPLX(SNGL(DABS(-DSIGN(DBLE(2.0),1.0D0))),CMAVS))    P0731320
      CMGVS = CMEVS - 2.0                                                P0731330
      WRITE (NUVI,9994) CMFVS, CMGVS                                     P0731340
C*****     END OF TEST STATEMENTS FOR SEGMENT 073                        P0731350
0731  FORMAT (/ 30H  TEST OF DABS IN EXPRESSIONS //4(D23.8/))            P0731360
0732  FORMAT (  30H  TEST OF AINT IN EXPRESSIONS //4(E19.6/))            P0731370
0733  FORMAT (  30H  TEST OF INT IN EXPRESSIONS  //4(I10/))              P0731380
0734  FORMAT (  30H  TEST OF IDINT IN EXPRESSIONS//4(I10/))              P0731390
0735  FORMAT (  35H  TEST OF AMOD, MOD IN EXPRESSIONS //                 P0731400
     1 2(E19.6/), 2(I10/))                                               P0731410
0736  FORMAT (  40H  TEST OF AMAX0,AMAX1,MAX0,MAX1 AND DMAX//            P0731420
     1 2(E19.6/), I10/ D23.8)                                            P0731430
0737  FORMAT (  40H1 TEST OF AMIN0,AMIN1,MIN0,MIN1 AND DMIN//            P0731440
     1 E19.6/ 2(I10/), D23.8)                                            P0731450
0738  FORMAT (/ 39H  TEST OF DSIGN AND DBLE IN EXPRESSIONS//4(D23.8/))  P0731460
0739  FORMAT (  35H  TEST OF SNGL,REAL,AIMAG,CMPLX AND /                 P0731470
     123H  CONJG IN EXPRESSIONS //3(E19.6/))                             P0731480
9994  FORMAT (  36H  TEST OF SOME COMBINATIONS OF ABOVE/                 P0731490
     122H  INTRINSIC FUNCTIONS //2(E19.6/) /40H  ALL ABOVE ANSWERS SHOULP0731500
     2D BE 0 FOR THIS/27H  SEGMENT TO BE SUCCESSFUL.)                    P0731510
9995  FORMAT ( /37H  TEST OF DIM AND IDIM IN EXPRESSIONS/2(E19.6/),      P0731520
     1 2(I10/))                                                          P0731530
C*****     END OF TEST SEGMENT 073                                       P0731540
C*****  WHEN EXECUTING ONLY SEGMENT 073, THE  STOP  AND  END  CARDS      P0731550
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                  P0731560
C*****  IN COLUMNS  1  AND  2  REMOVED.                                  P0731570
C=    STOP                                                               P0731580
C=    END                                                                P0731590
      STOP                                                               P073C1
      END                                                                P073C2
C***********************************************************************P0800010
C*****                                                                  P0800020
C*****                           EXPON - 080                            P0800030
C*****                                                                  P0800040
C***********************************************************************P0800050
C*****  GENERAL PURPOSE                                         ASA REFP0800060
C*****     .TO TEST BASIC EXTERNAL FUNCTION - EXP - EXPONENTIAL  8.3.3  P0800070
C*****     .USED IN SIMPLE ARITHMETIC EXPRESSIONS                TABLE 4P0800080
C*****     .INTRINSIC FUNCTIONS  ABS AND SIGN ASSUMED WORKING           P0800090
C*****      ARGUMENTS ARE POWERS OF 2                                   P0800100
C*****                                                                  P0800110
C*****  NO  S P E C I F I C A T I O N S  SEGMENT 080                    P0800120
C*****                                                                  P0800130
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0800140
C*****  WHEN EXECUTING ONLY SEGMENT 080, THE FOLLOWING STATEMENT        P0071520
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0071525
C*****                                                                  P0071530
C=    NUVI = 6                                                          P0071535
      NUVI = 6                                                          P080B1
      WRITE(NUVI,800)                                                   P0800150
800   FORMAT(15H1 EXPON - (080)//31H  BASIC EXTERNAL FUNCTION -EXP-     P0800160
     1//26H  (EXPONENTIAL -TYPE REAL)                                   P0800170
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0800180
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0800190
C*****     HEADER FOR SEGMENT 080 WRITTEN                               P0800200
C*****  ARGUMENT RANGE FROM -16.0 TO +16.0                              P0800210
      AVS = -16.0                                                       P0800220
      CVS =   4.0                                                       P0800230
      BVS = EXP(AVS)                                                    P0800240
      WRITE (NUVI,801) BVS                                              P0800250
      BVS = EXP(2. * CVS + AVS)                                         P0800260
      WRITE (NUVI,802)  BVS                                             P0800270
      BVS = EXP(AVS + (3. * CVS))                                       P0800280
      WRITE (NUVI, 803) BVS                                             P0800290
      BVS = EXP(ABS(AVS) + AVS)                                         P0800300
      WRITE (NUVI, 804) BVS                                             P0800310
      BVS = EXP(-AVS / CVS)                                             P0800320
      WRITE (NUVI, 805) BVS                                             P0800330
      BVS = EXP(SIGN(AVS + CVS * 2.0, CVS))                             P0800340
      WRITE (NUVI, 806) BVS                                             P0800350
      BVS = EXP(CVS + ABS(AVS) - 4.0)                                   P0800360
      WRITE(NUVI, 807) BVS                                              P0800370
      WRITE (NUVI, 808)                                                 P0800380
801   FORMAT( 9H0 X=-16.0,5X,25H0.1125351747192591145E-06/E27.7)        P0800390
802   FORMAT( 9H0 X= -8.0,5X,25H0.3354626279025118388E-03/E27.7)        P0800400
803   FORMAT( 9H0 X= -4.0,5X,25H0.1831563888873418029E-01/E27.7)        P0800410
804   FORMAT( 9H0 X=  0.0,5X,25H0.1000000000000000000E+01/E27.7)        P0800420
805   FORMAT( 9H0 X=  4.0,5X,25H0.5459815003314423908E+02/E27.7)        P0800430
806   FORMAT( 9H0 X=  8.0,5X,25H0.2980957987041728275E+04/E27.7)        P0800440
807   FORMAT( 9H0 X= 16.0,5X,25H0.8886110520507872637E+07/E27.7)        P0800450
808   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0800460
     1 PRINTED TO ,8H7 DIGITS)                                          P0800470
C*****    END OF TEST SEGMENT 080                                       P0800480
C*****  WHEN EXECUTING ONLY SEGMENT 080, THE  STOP  AND  END  CARDS     P0800490
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0800500
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0800510
C=    STOP                                                              P0800520
C=    END                                                               P0800530
      STOP                                                              P080C1
      END                                                               P080C2
C***********************************************************************P0810010
C*****                                                                  P0810020
C*****                       DEXPO - 081                                P0810030
C*****                                                                  P0810040
C***********************************************************************P0810050
C*****  GENERAL PURPOSE                                                 P0810060
C*****      TO TEST BASIC EXTERNAL FUNCTION - DEXP - EXPONENTIAL  ASA REFP0810070
C*****      USED IN SIMPLE ARITHMETIC EXPRESSIONS -SAME AS        8.3.3  P0810080
C*****      SEGMENT 080 EXCEPT DOUBLE PRECISION                   TABLE 4P0810090
C*****      INTRINSIC FUNCTIONS DABS AND DSIGN ASSUMED WORKING          P0810100
C*****      ARGUMENTS RANGE FROM -16.0D0 TO  +16.0D0, POWERS OF 2       P0810110
C*****                                                                  P0810120
C*****  S P E C I F I C A T I O N S  SEGMENT 081                        P0810130
C*****                                                                  P0011810
C*****  WHEN EXECUTING ONLY SEGMENT 081, THE SPECIFICATION STATEMENTS   P0011815
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011820
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011825
C*****                                                                  P0011830
C=    DOUBLE PRECISION AVD, BVD, CVD                                    P0011835
      DOUBLE PRECISION AVD, BVD, CVD                                    P081A1
C*****                                                                  P0011840
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0810140
C*****                                                                  P0071540
C*****  WHEN EXECUTING ONLY SEGMENT 081, THE FOLLOWING STATEMENT        P0071545
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071550
C=    NUVI = 6                                                          P0071555
      NUVI = 6                                                          P081B1
C*****                                                                  P0071560
810   FORMAT(15H1 DEXPO - (081)//32H  BASIC EXTERNAL FUNCTION -DEXP-    P0810150
     1//38H  (EXPONENTIAL -TYPE DOUBLE PRECISION)                       P0810160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0810170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0810180
      WRITE (NUVI, 810)                                                 P0810190
C*****    HEADER FOR SEGMENT 081 WRITTEN                                P0810200
      AVD = -16.0D0                                                     P0810210
      CVD =   4.0D0                                                     P0810220
      BVD = DEXP(AVD)                                                   P0810230
      WRITE (NUVI, 811) BVD                                             P0810240
      BVD = DEXP(2. * CVD + AVD)                                        P0810250
      WRITE (NUVI, 812) BVD                                             P0810260
      BVD = DEXP(AVD + (3. * CVD))                                      P0810270
      WRITE (NUVI, 813) BVD                                             P0810280
      BVD = DEXP(DABS(AVD) + AVD)                                       P0810290
      WRITE( NUVI, 814) BVD                                             P0810300
      BVD = DEXP(-AVD / CVD)                                            P0810310
      WRITE (NUVI, 815) BVD                                             P0810320
      BVD = DEXP(DSIGN(AVD + CVD * 2.0D0, CVD))                         P0810330
      WRITE (NUVI, 816) BVD                                             P0810340
      BVD = DEXP(CVD + DABS(AVD) - 4.0)                                 P0810350
      WRITE (NUVI, 817) BVD                                             P0810360
      WRITE (NUVI, 818)                                                 P0810370
811   FORMAT( 9H0 X=-16.0,5X,25H0.1125351747192591145D-06/D34.14)       P0810380
812   FORMAT( 9H0 X= -8.0,5X,25H0.3354626279025118388D-03/D34.14)       P0810390
813   FORMAT( 9H0 X= -4.0,5X,25H0.1831563888873418029D-01/D34.14)       P0810400
814   FORMAT( 9H0 X=  0.0,5X,25H0.1000000000000000000D+01/D34.14)       P0810410
815   FORMAT( 9H0 X=  4.0,5X,25H0.5459815003314423908D+02/D34.14)       P0810420
816   FORMAT( 9H0 X=  8.0,5X,25H0.2980957987041728275D+04/D34.14)       P0810430
817   FORMAT( 9H0 X= 16.0,5X,25H0.8886110520507872637D+07/D34.14)       P0810440
818   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0810450
     A PRINTED TO ,9H14 DIGITS)                                         P0810460
C*****    END OF TEST SEGMENT 081                                       P0810470
C*****  WHEN EXECUTING ONLY SEGMENT 081, THE  STOP  AND  END  CARDS     P0810480
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0810490
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0810500
C=    STOP                                                              P0810510
C=    END                                                               P0810520
      STOP                                                              P081C1
      END                                                               P081C2
C***********************************************************************P0820010
C******                                                                 P0820020
C*****                   CEXPO - (082)                                  P0820030
C******                                                                 P0820040
C***********************************************************************P0820050
C*****  GENERAL PURPOSE                                         ASA REF.P0820060
C*****    .TO TEST THE BASIC EXTERNAL FUNCTION- CEXP             8.3.3  P0820070
C*****    .TESTING RANGE EXTENDS FROM 0 TO 16 FOR MODULUS      (TABLE 4)P0820080
C*****     AND ARGUMENT, VARIES BY STEPS OF PI/3 MAGNITUDE              P0820090
C*****    .INTRINSIC FUNCTIONS CMPLX, SNGL, MOD ASSUMED WORKING         P0820100
C*****                                                                  P0820110
C*****  S P E C I F I C A T I O N S  SEGMENT 082                        P0820120
C*****                                                                  P0011850
C*****  WHEN EXECUTING ONLY SEGMENT 082, THE SPECIFICATION STATEMENTS   P0011855
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0011860
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011865
C*****                                                                  P0011870
C=    COMPLEX EP1C(30), AVC, BVC                                        P0011875
C=    DOUBLE PRECISION AVD, BVD                                         P0011880
      COMPLEX EP1C(30), AVC, BVC                                        P082A1
      DOUBLE PRECISION AVD, BVD                                         P082A2
C*****                                                                  P0011885
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0820130
C*****                                                                  P0071570
C*****  WHEN EXECUTING ONLY SEGMENT 082, THE FOLLOWING STATEMENT        P0071575
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071580
C=    NUVI = 6                                                          P0071585
      NUVI = 6                                                          P082B1
C*****                                                                  P0071590
      WRITE(NUVI,820)                                                   P0820140
820   FORMAT(15H1 CEXPO - (082)//32H  BASIC EXTERNAL FUNCTION -CEXP-    P0820150
     1// 29H  (EXPONENTIAL -TYPE COMPLEX)//27H  ASA REF.- 8.3.3 (TABLE 4P0820160
     2)//20H  (COMPLEX ARGUMENT)/8X,15HEXPECTED RESULT /8X,15HFUNCTION RP0820170
     3ESULT)                                                            P0820180
C*****  LOG OF 10                                                       P0820190
      BVD = 2.30258509299400D0                                          P0820200
C*****  SINE OF 60 DEGREES                                              P0820210
      AVD = .86602540378444D0                                           P0820220
C*****    INITIALIZE EP1C (EXPECTED VALUES)                             P0820230
      EP1C(1) = CMPLX(0.5E-7,SNGL(-AVD*1.D-7))                          P0820240
      EP1C(2) = CMPLX(2.5E-7,SNGL(-AVD*5.D-7))                          P0820250
      EP1C(3) = (1.E-6,0.0)                                             P0820260
      EP1C(4) = (5.E-6,0.0)                                             P0820270
      EP1C(5) = CMPLX(0.5E-5,SNGL(AVD*1.D-5))                           P0820280
      EP1C(6) = CMPLX(2.5E-5,SNGL(AVD*5.D-5))                           P0820290
      EP1C(7) = CMPLX(-.5E-4,SNGL(AVD * 1.D-4))                         P0820300
      EP1C(8) = CMPLX(-2.5E-4,SNGL(AVD*5.D-4))                          P0820310
      EP1C(9) = (-1.E-3,0.0)                                            P0820320
      EP1C(10) = (-5.E-3,0.0)                                           P0820330
      EP1C(11) = CMPLX(-0.5E-2,SNGL(-AVD*1.D-2))                        P0820340
      EP1C(12) = CMPLX(-2.5E-2,SNGL(-AVD * 5.D-2))                      P0820350
      EP1C(13) = CMPLX(0.5E-1,SNGL(-AVD*1.D-1))                         P0820360
      EP1C(14) = CMPLX(2.5E-1,SNGL(-AVD*5.D-1))                         P0820370
      EP1C(15) = (1.0,0.0)                                              P0820380
      EP1C(16) = (5.0,0.0)                                              P0820390
      EP1C(17) = CMPLX(0.5E1,SNGL(AVD * 1.D1))                          P0820400
      EP1C(18) = CMPLX(2.5E1,SNGL(AVD * 5.D1))                          P0820410
      EP1C(19) = CMPLX(-0.5E2,SNGL(AVD * 1.D2))                         P0820420
      EP1C(20) = CMPLX(-2.5E2,SNGL(AVD * 5.D2))                         P0820430
      EP1C(21) = (-1.E3,0.0)                                            P0820440
      EP1C(22) = (-5.E3,0.0)                                            P0820450
      EP1C(23) = CMPLX(-0.5E4,SNGL(-AVD * 1.D4))                        P0820460
      EP1C(24) = CMPLX(-2.5E4,SNGL(-AVD * 5.D4))                        P0820470
      EP1C(25) = CMPLX(0.5E5,SNGL(-AVD * 1.D5))                         P0820480
      EP1C(26) = CMPLX(2.5E5,SNGL(-AVD * 5.D5))                         P0820490
      EP1C(27) = (1.E6,0.0)                                             P0820500
      EP1C(28) = (5.E6,0.0)                                             P0820510
      EP1C(29) = CMPLX(0.5E7,SNGL(AVD * 1.D7))                          P0820520
      EP1C(30) = CMPLX(2.5E7,SNGL(AVD * 5.D7))                          P0820530
      IVI = 0                                                           P0820540
  821 IVI = IVI + 1                                                     P0820550
      IF ( MOD(IVI,2).EQ.0) GO TO 822                                   P0820560
      XIVS = ((IVI + 1)/2) - 8                                          P0820570
      AVS = BVD * XIVS                                                  P0820580
      GO TO 823                                                         P0820590
C*****  1.609  IS LOG OF 5                                              P0820600
  822 XIVS = (IVI / 2) - 8                                              P0820610
      AVS = BVD * XIVS + 1.6094379124341D0                              P0820620
C*****  1.047 IS PI/3                                                   P0820630
 823  AVC =  CMPLX(AVS,SNGL(1.0471975511966D0 * XIVS))                  P0820640
      BVC = CEXP(AVC)                                                   P0820650
      WRITE(NUVI, 824) AVC, EP1C(IVI), BVC                              P0820660
      IF (IVI - 10) 825, 827, 825                                       P0820670
  825 IF (IVI - 20) 826, 827, 826                                       P0820680
  826 IF (IVI - 30) 821, 828, 828                                       P0820690
  827 WRITE(NUVI, 829)                                                  P0820700
      GO TO 821                                                         P0820710
  828 CONTINUE                                                          P0820720
829   FORMAT(22H1 CEXPO - (082) -CEXP-)                                 P0820730
  824 FORMAT(3H0 (,E14.7,1H,,E14.7,1H),2(/8X,2E16.7))                   P0820740
C*****    END OF TEST SEGMENT 082                                       P0820750
C*****  WHEN EXECUTING ONLY SEGMENT 082, THE STOP AND END CARDS         P0820760
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0820770
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0820780
C=    STOP                                                              P0820790
C=    END                                                               P0820800
      STOP                                                              P082C1
      END                                                               P082C2
C***********************************************************************P0830010
C*****                                                                  P0830020
C*****                       LOGTM - 083                                P0830030
C*****                                                                  P0830040
C***********************************************************************P0830050
C*****  GENERAL PURPOSE                                                 P0830060
C*****    .TO TEST BASIC EXTERNAL FUNCTION - ALOG -             ASA REF P0830070
C*****     NATURAL LOG -USED IN SIMPLE ARITHMETIC EXPRESSIONS    8.3.3  P0830080
C*****     INTRINSIC FUNCTIONS ABS,AMIN1,INT,MINO,FLOAT,        TABLE 4 P0830090
C*****     SIGN ASSUMED WORKING                                         P0830100
C*****     ARGUMENTS ARE POWERS(OR SUMS) OF 2                           P0830110
C*****                                                                  P0830120
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0830130
C*****                                                                  P0071600
C*****  WHEN EXECUTING ONLY SEGMENT 083, THE FOLLOWING STATEMENT        P0071605
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071610
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C=    NUVI = 6                                                          P0071615
      NUVI = 6                                                          P083B1
C*****                                                                  P0071620
830   FORMAT(15H1 LOGTM - (083)//32H  BASIC EXTERNAL FUNCTION -ALOG-    P0830140
     1//26H  (NATURAL LOG -TYPE REAL)                                   P0830150
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0830160
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0830170
      WRITE (NUVI, 830)                                                 P0830180
C*****    HEADER FOR SEGMENT 083 WRITTEN                                P0830190
      AVS = .25                                                         P0830200
      CVS = 2.0                                                         P0830210
      MVI = -2                                                          P0830220
      BVS = ALOG(AVS / 2.0)                                             P0830230
      WRITE (NUVI, 831) BVS                                             P0830240
      BVS = ALOG(AVS)                                                   P0830250
      WRITE (NUVI, 832) BVS                                             P0830260
      BVS = ALOG(AVS * CVS)                                             P0830270
      WRITE (NUVI, 833) BVS                                             P0830280
      BVS = ALOG(AVS * CVS ** 2)                                        P0830290
      WRITE (NUVI, 834) BVS                                             P0830300
      BVS = ALOG(AMIN1(AVS * 2.0 + ABS(FLOAT(MVI) / CVS),CVS))          P0830310
      WRITE (NUVI, 835) BVS                                             P0830320
      BVS = ALOG(SIGN(FLOAT(MIN0(MVI,INT(CVS))),AVS))                   P0830330
      WRITE (NUVI, 836) BVS                                             P0830340
831   FORMAT( 9H0 X=0.125,5X,19H-2.0794415416798359/14X,F9.6)           P0830350
832   FORMAT( 9H0 X=0.25 ,5X,19H-1.3862943611198906/14X,F 9.6)          P0830360
833   FORMAT( 9H0 X=0.5  ,5X,19H-0.6931471805599453/14X,F10.7)          P0830370
834   FORMAT( 9H0 X=1.0  ,5X,19H 0.0000000000000000/14X,F10.7)          P0830380
835   FORMAT( 9H0 X=1.5  ,5X,19H 0.4054651081081644/14X,F10.7)          P0830390
836   FORMAT( 9H0 X=2.0  ,5X,19H 0.6931471805599453/14X,F10.7)          P0830400
      WRITE (NUVI, 837)                                                 P0830410
837   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0830420
     1 PRINTED TO ,8H7 DIGITS)                                          P0830430
C*****    END OF TEST SEGMENT 083                                       P0830440
C*****  WHEN EXECUTING ONLY SEGMENT 083, THE  STOP  AND  END  CARDS     P0830450
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0830460
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0830470
C=    STOP                                                              P0830480
C=    END                                                               P0830490
      STOP                                                              P083C1
      END                                                               P083C2
C***********************************************************************P0840010
C*****                                                                  P0840020
C*****                       DPLOG - 084                                P0840030
C*****                                                                  P0840040
C***********************************************************************P0840050
C*****  GENERAL PURPOSE                                                 P0840060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DLOG -             ASA REF P0840070
C*****     NATURAL LOG -TYPE DOUBLE PRECISION                    8.3.3  P0840080
C*****     USED IN SIMPLE ARITHMETIC EXPRESSIONS               TABLE 4 P0840090
C*****     INTRINSIC FUNCTIONS DMIN1,DABS,DBLE,FLOAT,DSIGN,             P0840100
C*****     MIN0,DINT, ASSUMED WORKING                                   P0840110
C*****     ARGUMENTS ARE POWERS OF 2                                    P0840120
C*****                                                                  P0840130
C*****  S P E C I F I C A T I O N S  SEGMENT 084                        P0840140
C*****                                                                  P0011890
C*****  WHEN EXECUTING ONLY SEGMENT 084, THE SPECIFICATION STATEMENTS   P0011895
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0011900
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011905
C*****                                                                  P0011910
C=    DOUBLE PRECISION AVD, BVD, CVD                                    P0011915
      DOUBLE PRECISION AVD, BVD, CVD                                    P084A1
C*****                                                                  P0011920
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0840150
C*****                                                                  P0071630
C*****  WHEN EXECUTING ONLY SEGMENT 084, THE FOLLOWING STATEMENT        P0071635
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071640
C=    NUVI = 6                                                          P0071645
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      NUVI = 6                                                          P084B1
C*****                                                                  P0071650
840   FORMAT(15H1 DPLOG - (084)//32H  BASIC EXTERNAL FUNCTION -DLOG-    P0840160
     1//38H  (NATURAL LOG -TYPE DOUBLE PRECISION)                       P0840170
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0840180
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0840190
      WRITE (NUVI, 840)                                                 P0840200
C*****    HEADER FOR SEGMENT 084 WRITTEN                                P0840210
      AVD = .25D0                                                       P0840220
      CVD = 2.0D0                                                       P0840230
      MVI = -2                                                          P0840240
      BVD = DLOG(AVD / 2.0D0)                                           P0840250
      WRITE (NUVI, 841) BVD                                             P0840260
      BVD = DLOG(AVD)                                                   P0840270
      WRITE( NUVI, 842) BVD                                             P0840280
      BVD = DLOG(AVD * CVD)                                             P0840290
      WRITE(NUVI, 843) BVD                                              P0840300
      BVD = DLOG(AVD * CVD ** 2)                                        P0840310
      WRITE (NUVI, 844) BVD                                             P0840320
      BVD = DLOG(DMIN1(AVD * 2.0D0 +DABS(DBLE(FLOAT(MVI))/CVD), CVD))   P0840330
      WRITE (NUVI, 845) BVD                                             P0840340
      BVD = DLOG(DSIGN(DBLE(FLOAT(MIN0(MVI,IDINT(CVD)))),AVD))          P0840350
      WRITE (NUVI, 846) BVD                                             P0840360
      WRITE (NUVI, 847)                                                 P0840370
841   FORMAT( 9H0 X=0.125,5X,23H-2.0794415416798359D+00/1PD34.13)       P0840380
842   FORMAT( 9H0 X=0.25 ,5X,23H-1.3862943611198906D+00/1PD34.13)       P0840390
843   FORMAT( 9H0 X=0.5  ,5X,23H-0.6931471805599453D+00/  D35.14)       P0840400
844   FORMAT( 9H0 X=1.0  ,5X,23H 0.0000000000000000     /  D35.14)       P0840410
845   FORMAT( 9H0 X=1.5  ,5X,23H 0.4054651081081644D+00/  D35.14)       P0840420
846   FORMAT( 9H0 X=2.0  ,5X,23H 0.6931471805599453D+00/  D35.14)       P0840430
847   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0840440
     A PRINTED TO ,9H14 DIGITS)                                         P0840450
C*****    END OF TEST SEGMENT 084                                       P0840460
C*****  WHEN EXECUTING ONLY SEGMENT 084, THE  STOP  AND  END  CARDS     P0840470
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0840480
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0840490
C=    STOP                                                              P0840500
C=    END                                                               P0840510
      STOP                                                              P084C1
      END                                                               P084C2
C***********************************************************************P0850010
C*****                                                                  P0850020
C*****                         CXLOG - (085)                            P0850030
C*****                                                                  P0850040
C***********************************************************************P0850050
C*****  GENERAL PURPOSE                                         ASA REF P0850060
C*****    .TO TEST BASIC EXTERNAL FUNCTION - CLOG -             ASA REF P0850070
C*****    (COMPLEX LOG)                                          8.3.3  P0850080
C*****     TESTING RANGE EXTENDS FROM 0 TO 5.E7 FOR MODULUS     TABLE 4 P0850090
C*****     AND ARGUMENT VARIES BY STEPS OF PI/3 MAGNITUDE               P0850100
C*****     INTRINSIC FUNCTIONS CMPLX, SNGL, MOD ASSUMED WORKING         P0850110
C*****                                                                  P0850120
C*****  S P E C I F I C A T I O N S  SEGMENT 085                        P0850130
C*****                                                                  P0011930
C*****  WHEN EXECUTING ONLY SEGMENT 085, THE SPECIFICATION STATEMENTS   P0011935
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011940
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011945
C*****                                                                  P0011950
C=    COMPLEX EP1C(30), AVC, BVC                                        P0011955
C=    DOUBLE PRECISION AVD, BVD                                         P0011960
      COMPLEX EP1C(30), AVC, BVC                                        P085A1
      DOUBLE PRECISION AVD, BVD                                         P085A2
C*****                                                                  P0011965
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0850140
C*****                                                                  P0071660
C*****  WHEN EXECUTING ONLY SEGMENT 085, THE FOLLOWING STATEMENT        P0071665
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071670
C=    NUVI = 6                                                          P0071675
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      NUVI = 6                                                          P085B1
C*****                                                                  P0071680
      WRITE (NUVI, 850)                                                 P0850150
850   FORMAT( 15H1 CXLOG - (085) //32H  BASIC EXTERNAL FUNCTION -CLOG-  P0850160
     1// 29H  (NATURAL LOG -TYPE COMPLEX)//27H  ASA REF.- 8.3.3 (TABLE 4P0850170
     2)//20H  (COMPLEX ARGUMENT)/ 8X,15HEXPECTED RESULT /8X,15HFUNCTION P0850180
     3RESULT)                                                           P0850190
C*****  LOG OF 10                                                       P0850200
      BVD = 2.302585092994OD0                                           P0850210
C*****  SINE OF 60 DEGREES                                              P0850220
      AVD = .86602540378444D0                                           P0850230
C*****  INITIALIZE EP1C (EXPECTED VALUES)                               P0850240
      EP1C(1) = CMPLX(0.5E-7,SNGL(-AVD*1.D-7))                          P0850250
      EP1C(2) = CMPLX(2.5E-7,SNGL(-AVD*5.D-7))                          P0850260
      EP1C(3) = (1.E-6,0.0)                                             P0850270
      EP1C(4) = (5.E-6,0.0)                                             P0850280
      EP1C(5) = CMPLX(0.5E-5,SNGL(AVD*1.D-5))                           P0850290
      EP1C(6) = CMPLX(2.5E-5,SNGL(AVD*5.D-5))                           P0850300
      EP1C(7) = CMPLX(-.5E-4,SNGL(AVD * 1.D-4))                         P0850310
      EP1C(8) = CMPLX(-2.5E-4,SNGL(AVD*5.D-4))                          P0850320
      EP1C(9) = (-1.E-3,0.0)                                            P0850330
      EP1C(10) = (-5.E-3,0.0)                                           P0850340
      EP1C(11) = CMPLX(-0.5E-2,SNGL(-AVD*1.D-2))                        P0850350
      EP1C(12) = CMPLX(-2.5E-2,SNGL(-AVD * 5.D-2))                      P0850360
      EP1C(13) = CMPLX(0.5E-1,SNGL(-AVD*1.D-1))                         P0850370
      EP1C(14) = CMPLX(2.5E-1,SNGL(-AVD*5.D-1))                         P0850380
      EP1C(15) = (1.0,0.0)                                              P0850390
      EP1C(16) = (5.0,0.0)                                              P0850400
      EP1C(17) = CMPLX(0.5E1,SNGL(AVD * 1.D1))                          P0850410
      EP1C(18) = CMPLX(2.5E1,SNGL(AVD * 5.D1))                          P0850420
      EP1C(19) = CMPLX(-0.5E2,SNGL(AVD * 1.D2))                         P0850430
      EP1C(20) = CMPLX(-2.5E2,SNGL(AVD * 5.D2))                         P0850440
      EP1C(21) = (-1.E3,0.0)                                            P0850450
      EP1C(22) = (-5.E3,0.0)                                            P0850460
      EP1C(23) = CMPLX(-0.5E4,SNGL(-AVD * 1.D4))                        P0850470
      EP1C(24) = CMPLX(-2.5E4,SNGL(-AVD * 5.D4))                        P0850480
      EP1C(25) = CMPLX(0.5E5,SNGL(-AVD * 1.D5))                         P0850490
      EP1C(26) = CMPLX(2.5E5,SNGL(-AVD * 5.D5))                         P0850500
      EP1C(27) = (1.E6,0.0)                                             P0850510
      EP1C(28) = (5.E6,0.0)                                             P0850520
      EP1C(29) = CMPLX(0.5E7,SNGL(AVD * 1.D7))                          P0850530
      EP1C(30) = CMPLX(2.5E7,SNGL(AVD * 5.D7))                          P0850540
C*****  YVS COMPENSATES FOR -2PI AND +2PI GENERATED BY USE OF XIVS*PI/3 P0850550
C*****  FOR EXPECTED IMAGINARY VALUES, TAKES VALUES +6,0,-6 DURING RANGEP0850560
      YVS = 6.                                                          P0850570
      IVI = 0                                                           P0850580
851   IVI = IVI +1                                                      P0850590
      IF (MOD(IVI, 2) .EQ. 0) GO TO 852                                 P0850600
      XIVS = ((IVI + 1)/2) - 8                                          P0850610
      AVS = BVD * XIVS                                                  P0850620
      GO TO 853                                                         P0850630
C*****     1.609 IS LOG OF 5                                            P0850640
852   XIVS = (IVI / 2) - 8                                              P0850650
      AVS = (BVD * XIVS) + 1.6094379124341D0                            P0850660
C*****     1.047 IS PI/3                                                P0850670
853   AVC = CMPLX (AVS, SNGL(1.0471975511966D0 * (XIVS + YVS)))         P0850680
      BVC = CLOG (EP1C(IVI))                                            P0850690
      WRITE (NUVI, 854) EP1C(IVI), AVC, BVC                             P0850700
      IF(IVI - 10) 855, 858, 855                                        P0850710
855   IF (IVI - 20) 856, 859, 856                                       P0850720
856   IF (IVI - 22) 857, 7850, 857                                      P0850730
857   IF (IVI - 30) 851, 7851, 7851                                     P0850740
858   YVS = 0.0                                                         P0850750
859   WRITE (NUVI, 7852)                                                P0850760
      GO TO 851                                                         P0850770
7850  YVS = -6.0                                                        P0850780
      GO TO 851                                                         P0850790
7851  CONTINUE                                                          P0850800
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854   FORMAT(3H0 (,E14.7,1H,,E14.7,1H),2(/8X,2E16.7))                    P0850810
7852  FORMAT(22H1 CXLOG - (085) -CLOG-)                                  P0850820
C*****    END OF TEST SEGMENT 085                                        P0850830
C*****  WHEN EXECUTING ONLY SEGMENT 085, THE STOP AND END CARDS          P0850840
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                   P0850850
C*****  IN COLUMNS 1  AND  2 REMOVED.                                    P0850860
C=    STOP                                                              P0850870
C=    END                                                               P0850880
      STOP                                                              P085C1
      END                                                               P085C2
C***********************************************************************P0860010
C*****                                                                  P0860020
C*****                       COLOG - 086                                P0860030
C*****                                                                  P0860040
C***********************************************************************P0860050
C*****  GENERAL PURPOSE                                                  P0860060
C*****     TO TEST BASIC EXTERNAL FUNCTION - ALOG10 -           ASA REF P0860070
C*****     COMMON LOG - TYPE REAL                                8.3.3  P0860080
C*****     USED IN SIMPLE ARITHMETIC EXPRESSIONS                 TABLE 4P0860090
C*****     INTRINSIC FUNCTIONS ABS,AINT,AMAX1,SIGN, ASSUMED WORKING    P0860100
C*****     ARGUMENT RANGE  0.5 TO 16.0 ,POWERS OF 2                     P0860110
C*****                                                                  P0860120
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0860130
C*****                                                                  P0071690
C*****  WHEN EXECUTING ONLY SEGMENT 086, THE FOLLOWING STATEMENT        P0071695
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071700
C=    NUVI = 6                                                          P0071705
      NUVI = 6                                                          P086B1
C*****                                                                  P0071710
860   FORMAT(15H1 COLOG - (086)//34H  BASIC EXTERNAL FUNCTION -ALOG10-  P0860140
     1//25H  (COMMON LOG -TYPE REAL)                                    P0860150
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0860160
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0860170
      WRITE (NUVI, 860)                                                 P0860180
C*****    HEADER FOR SEGMENT 086 WRITTEN                                P0860190
      AVS = -2.0                                                        P0860200
      CVS = -4.0                                                        P0860210
      BVS = ALOG10(AVS / CVS)                                           P0860220
      WRITE (NUVI, 861) BVS                                             P0860230
      BVS = ALOG10(ABS(AVS + 1.0))                                      P0860240
      WRITE (NUVI, 862) BVS                                             P0860250
      BVS = ALOG10( -AVS)                                               P0860260
      WRITE (NUVI, 863) BVS                                             P0860270
      BVS = ALOG10(AINT(AVS + 2.0 - CVS))                               P0860280
      WRITE (NUVI, 864) BVS                                             P0860290
      BVS = ALOG10(AMAX1(AVS * CVS, CVS * 2.0))                         P0860300
      WRITE (NUVI, 865) BVS                                             P0860310
      BVS = ALOG10(SIGN(CVS,(-AVS)) **2)                                P0860320
      WRITE (NUVI, 866) BVS                                             P0860330
      WRITE (NUVI, 867)                                                 P0860340
861   FORMAT( 8H0 X= 0.5,5X,25H-0.3010299956639811952137/8X, F15.7)     P0860350
862   FORMAT( 8H0 X= 1.0,5X,25H 0.0000000000000000000000/8X, F15.7)     P0860360
863   FORMAT( 8H0 X= 2.0,5X,25H 0.3010299956639811952137/8X, F15.7)     P0860370
864   FORMAT( 8H0 X= 4.0,5X,25H 0.6020599913279623904275/8X, F15.7)     P0860380
865   FORMAT( 8H0 X= 8.0,5X,25H 0.9030899869919435856412/8X, F15.7)     P0860390
866   FORMAT( 8H0 X=16.0,5X,25H 1.2041199826559247808550/8X, F15.7)     P0860400
867   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0860410
     1 PRINTED TO ,8H7 DIGITS)                                          P0860420
C*****    END OF TEST SEGMENT 086                                       P0860430
C*****  WHEN EXECUTING ONLY SEGMENT 086, THE  STOP  AND  END  CARDS     P0860440
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                   P0860450
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0860460
C=    STOP                                                              P0860470
C=    END                                                               P0860480
      STOP                                                              P086C1
      END                                                               P086C2
C***********************************************************************P0870010
C*****                                                                  P0870020
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C*****                       DCLOG - 087                                P0870030
C*****                                                                  P0870040
C***********************************************************************P0870050
C*****  GENERAL PURPOSE                                                 P0870060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DLOG10 -         ASA REFP0870070
C*****     COMMON LOG - TYPE DOUBLE PRECISION                 8.3.3   P0870080
C*****     SAME AS SEGMENT 086 EXCEPT FOR TYPE                TABLE 4P0870090
C*****     INTRINSIC FUNCTIONS DABS,IDINT,FLOAT,DBLE,                   P0870100
C*****     DMAX1,DSIGN ASSUMED WORKING                                  P0870110
C*****     ARGUMENT RANGE  0.5 TO 16.0  POWERS OF 2                     P0870120
C*****                                                                  P0870130
C*****  S P E C I F I C A T I O N S  SEGMENT 087                        P0870140
C*****                                                                  P0011970
C*****  WHEN EXECUTING ONLY SEGMENT 087, THE SPECIFICATION STATEMENTS   P0011975
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0011980
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0011985
C*****                                                                  P0011990
C=      DOUBLE PRECISION AVD, BVD, CVD                                  P0011995
        DOUBLE PRECISION AVD, BVD, CVD                                  P087A1
C*****                                                                  P0012000
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P0870150
C*****                                                                  P0071720
C*****  WHEN EXECUTING ONLY SEGMENT 087, THE FOLLOWING STATEMENT        P0071725
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071730
C=      NUVI = 6                                                        P0071735
        NUVI = 6                                                        P087B1
C*****                                                                  P0071740
870     FORMAT(15H1 DCLOG - (087)//34H  BASIC EXTERNAL FUNCTION -DLOG10-  P0870160
       1//37H  (COMMON LOG -TYPE DOUBLE PRECISION)                      P0870170
       2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0870180
       3 HOLLERITH INFORMATION//9H  RESULTS)                            P0870190
        WRITE (NUVI, 870)                                               P0870200
C*****     HEADER FOR SEGMENT 087 WRITTEN                               P0870210
        AVD = -2.0D0                                                    P0870220
        CVD = -4.0D0                                                    P0870230
        BVD = DLOG10(AVD / CVD)                                         P0870240
        WRITE (NUVI, 871) BVD                                           P0870250
        BVD = DLOG10(DABS(AVD + 1.0D0))                                 P0870260
        WRITE (NUVI, 872) BVD                                           P0870270
        BVD = DLOG10( -AVD)                                             P0870280
        WRITE (NUVI, 873) BVD                                           P0870290
        BVD = DLOG10(DBLE(FLOAT(IDINT(AVD + 2.0D0 - CVD))))             P0870300
        WRITE (NUVI, 874) BVD                                           P0870310
        BVD = DLOG10(DMAX1(AVD * CVD, CVD * 2.0D0))                     P0870320
        WRITE (NUVI, 875) BVD                                           P0870330
        BVD = DLOG10(DSIGN(CVD,(-AVD)) **2)                             P0870340
        WRITE (NUVI, 876) BVD                                           P0870350
        WRITE (NUVI, 877)                                               P0870360
871     FORMAT( 8H0 X= 0.5,5X,29H-0.30102999566398119521370D+00/D34.14)  P0870370
872     FORMAT( 8H0 X= 1.0,5X,29H 0.00000000000000000000      /D34.14)  P0870380
873     FORMAT( 8H0 X= 2.0,5X,29H 0.30102999566398119521370D+00/D34.14)  P0870390
874     FORMAT( 8H0 X= 4.0,5X,29H 0.60205999132796239042750D+00/D34.14)  P0870400
875     FORMAT( 8H0 X= 8.0,5X,29H 0.90308998699194358564120D+00/D34.14)  P0870410
876     FORMAT( 8H0 X=16.0,5X,29H 1.20411998265592478085500D+00/1PD33.13)  P0870420
877     FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0870430
       A PRINTED TO ,9H14 DIGITS)                                       P0870440
C*****     END OF TEST SEGMENT 087                                      P0870450
C*****  WHEN EXECUTING ONLY SEGMENT 087, THE  STOP  AND  END  CARDS     P0870460
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0870470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0870480
C=      STOP                                                            P0870490
C=      END                                                             P0870500
        STOP                                                            P087C1
        END                                                             P087C2
C***********************************************************************P0880010
C*****                                                                  P0880020
C*****                       SINUS - 088                                P0880030
C*****                                                                  P0880040
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C***********************************************************************P0880050
C*****  GENERAL PURPOSE                                          ASA REFP0880060
C*****     TO TEST BASIC EXTERNAL FUNCTION - SIN -               8.3.3  P0880070
C*****     TRIGONOMETRIC SINE - TYPE REAL                        TABLE 4P0880080
C*****     INTRINSIC FUNCTION SNGL ASSUMED WORKING                      P0880090
C*****     ARGUMENTS FROM 0 TO 2 PI                                     P0880100
C*****                                                                  P0880110
C*****  S P E C I F I C A T I O N S  SEGMENT 088                        P0880120
C*****                                                                  P0012010
C*****  WHEN EXECUTING ONLY SEGMENT 088, THE SPECIFICATION STATEMENTS   P0012015
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C=                  P0012020
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P0012025
C*****                                                                  P0012030
C=    DOUBLE PRECISION AVO, BVO, CVO, DVO, EVD, PIVO                    P0012035
      DOUBLE PRECISION AVD, BVD, CVD, DVO, EVO, PIVO                    P088A1
C*****                                                                  P0012040
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0880130
C*****                                                                  P0071750
C*****  WHEN EXECUTING ONLY SEGMENT 088, THE FOLLOWING STATEMENT        P0071755
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVED.          P0071760
C=    NUVI = 6                                                          P0071765
      NUVI = 6                                                          P088B1
C*****                                                                  P0071770
      WRITE (NUVI, 880)                                                 P0880140
880   FORMAT(15H1 SINUS - (088)//31H  BASIC EXTERNAL FUNCTION -SIN-     P0880150
     1//33H  (TRIGONOMETRIC SINE -TYPE REAL)                            P0880160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0880170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0880180
C*****    HEAOER FOR SEGMENT 088 WRITTEN                                P0880190
      AVO = 3.140625D+0                                                 P0880200
      BVD = 0.96130371093750-3                                          P0880210
      CVD = 0.572204589843750-5                                         P0880220
      DVD = 0.5960464477539060-6                                        P0880230
      EVD = 0.317865095470560-7                                         P0880240
C*****PI IS SUM OF AVO TO EVD, PARTS ARE EXPRESSED IN SUMS OF POWERS OF P0880250
C*****2, TO PERMIT A POSSIBLE 20 DECIMAL DIGIT ARGUMENT TO BE CREATED   P0880260
      PIVD = EVD + DVD + CVD + BVD + AVD                                P0880270
      AVS = 1.0                                                         P0880280
      CVS = 2.0                                                         P0880290
      BVS = SIN(CVS - 2.0 * AVS)                                        P0880300
      WRITE (NUVI, 881) BVS                                             P0880310
      BVS = SIN(AVS)                                                    P0880320
      WRITE (NUVI, 882) BVS                                             P0880330
      BVS = SIN (CVS)                                                   P0880340
      WRITE (NUVI, 883) BVS                                             P0880350
      BVS = SIN(AVS + CVS)                                              P0880360
      WRITE (NUVI,884) BVS                                              P0880370
      BVS = SIN(SNGL(PIVD))                                             P0880380
      WRITE (NUVI, 885) BVS                                             P0880390
      BVS = SIN(2. * CVS)                                               P0880400
      WRITE (NUVI, 886) BVS                                             P0880410
      BVS = SIN(2.0 + CVS + AVS)                                        P0880420
      WRITE (NUVI, 887) BVS                                             P0880430
      BVS = SIN(CVS * (AVS + CVS))                                      P0880440
      WRITE (NUVI, 888) BVS                                             P0880450
      BVS = SIN(SNGL(2.0D0 * PIVD))                                     P0880460
      WRITE (NUVI, 889) BVS                                             P0880470
      WRITE (NUVI, 7880)                                                P0880480
881   FORMAT( 9H0 X= 0.0 ,5X,15H 0.000000000000  /14X, F10.7)          P0880490
882   FORMAT( 9H0 X= 1.0 ,5X,15H+0.841470984808  /14X, F10.7)          P0880500
883   FORMAT( 9H0 X= 2.0 ,5X,15H+0.909297426826  /14X, F10.7)          P0880510
884   FORMAT( 9H0 X= 3.0 ,5X,15H+0.141120008060  /14X, F10.7)          P0880520
885   FORMAT( 9H0 X= (PI),5X,15H 0.000000000000  /14X, F10.7)          P0880530
886   FORMAT( 9H0 X= 4.0 ,5X,15H-0.756802495308  /14X, F10.7)          P0880540
887   FORMAT( 9H0 X= 5.0 ,5X,15H-0.958924274663  /14X, F10.7)          P0880550
888   FORMAT( 9H0 X= 6.0 ,5X,15H-0.279415498198  /14X, F10.7)          P0880560
889   FORMAT( 9H0 X=(2PI),5X,15H 0.000000000000  /14X, F10.7)          P0880570
7880  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0880580
     1 PRINTED TO ,8H7 DIGITS)                                          P0880590
C*****     END OF TEST SEGMENT 088                                      P0880600
C*****  WHEN EXECUTING ONLY SEGMENT 088, THE  STOP  AND  END  CARDS     P0880610
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0880620
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0880630
C=     STOP                                                             P0880640
C=     END                                                              P0880650
       STOP                                                             P088C1
       END                                                              P088C2
C***********************************************************************P0890010
C*****                                                                  P0890020
C*****                       DPSIN - 089                                P0890030
C*****                                                                  P0890040
C***********************************************************************P0890050
C*****  GENERAL PURPOSE                                         ASA REFP0890060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DSIN -             8.3.3  P0890070
C*****     TRIGONOMETRIC SINE - TYPE DOUBLE PRECISION           TABLE 4P0890080
C*****     SAME AS SEGMENT 088 EXCEPT D.P.                              P0890090
C*****     INTRINSIC FUNCTION DSIGN ASSUMED WORKING                     P0890100
C*****     ARGUMENTS FROM 0 TO 2 PI                                     P0890110
C*****                                                                  P0890120
C*****  S P E C I F I C A T I O N S  SEGMENT 089                        P0890130
C*****                                                                  P0012050
C*****  WHEN EXECUTING ONLY SEGMENT 089, THE SPECIFICATION STATEMENTS   P0012055
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0012060
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012065
C*****                                                                  P0012070
C=     DOUBLE PRECISION AVD, BVD, CVD, DVD, EVD, PIVD, XVD, FVD, GVD    P0012075
       DOUBLE PRECISION AVD, BVD, CVD, DVD, EVD, PIVD, XVD, FVD, GVD    P089A1
C*****                                                                  P0012080
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0890140
C*****                                                                  P0071780
C*****  WHEN EXECUTING ONLY SEGMENT 089, THE FOLLOWING STATEMENT        P0071785
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071790
C=     NUVI = 6                                                         P0071795
       NUVI = 6                                                         P089B1
C*****                                                                  P0071800
890    FORMAT(15H1 DPSIN - (089)//32H  BASIC EXTERNAL FUNCTION -DSIN-   P0890150
     1//33H  (TRIGONOMETRIC SINE -TYPE D.P.)                            P0890160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0890170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0890180
       WRITE (NUVI, 890)                                                P0890190
C*****     HEADER FOR SEGMENT 089 WRITTEN                               P0890200
       AVD = 3.140625D+0                                                P0890210
       BVD = 0.9613037109375D-3                                         P0890220
       CVD = 0.57220458984375D-5                                        P0890230
       DVD = 0.5960464477539062D-6                                      P0890240
       EVD = 0.317865095470560-7                                        P0890250
C*****PI IS SUM OF AVD TO EVD, PARTS ARE EXPRESSED IN SUMS OF POWERS OF P0890260
C*****2, TO PERMIT A POSSIBLE 20 DECIMAL DIGIT ARGUMENT TO BE CREATED   P0890270
       PIVD = EVD + DVD + CVD + BVD + AVD                               P0890280
       FVD = 1.0D0                                                      P0890290
       GVD = 2.0D0                                                      P0890300
       XVD = DSIN(GVD - 2.0D0 * FVD)                                    P0890310
       WRITE (NUVI, 891) XVD                                            P0890320
       XVD = DSIN(FVD)                                                  P0890330
       WRITE (NUVI, 892) XVD                                            P0890340
       XVD = DSIN(GVD)                                                  P0890350
       WRITE (NUVI, 893) XVD                                            P0890360
       XVD = DSIN(GVD + FVD)                                            P0890370
       WRITE (NUVI, 894) XVD                                            P0890380
       XVD = DSIN(PIVD)                                                 P0890390
       WRITE (NUVI, 895) XVD                                            P0890400
       XVD = DSIN(2. * GVD)                                             P0890410
       WRITE (NUVI, 896) XVD                                            P0890420
       XVD = DSIN(2.0 +FVD + GVD)                                       P0890430
       WRITE (NUVI, 897) XVD                                            P0890440
       XVD = DSIN(GVD * (FVD + GVD))                                    P0890450
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      WRITE (NUVI, 898) XVD                                             P0890460
      XVD = DSIN(DSIGN(2.0D0 * PIVD, GVD))                              P0890470
      WRITE (NUVI, 899) XVD                                             P0890480
      WRITE (NUVI, 7890)                                                P0890490
891   FORMAT(9H0 X= 0.0 ,  31H  0.00000000000000000000000     / D31.14) P0890500
892   FORMAT(9H0 X= 1.0 ,  31H +0.84147098480789650665250D+00 /D31.14)  P0890510
893   FORMAT(9H0 X= 2.0 ,  31H +0.90929742682568169539602D+00 /D31.14)  P0890520
894   FORMAT(9H0 X= 3.0 ,  31H +0.14112000805986722210074D+00 /D31.14)  P0890530
895   FORMAT(9H0 X= (PI),  31H  0.00000000000000000000000     / D31.14) P0890540
896   FORMAT(9H0 X= 4.0 ,  31H -0.75680249530792825137264D+00 /D31.14)  P0890550
897   FORMAT(9H0 X= 5.0 ,  31H -0.95892427466313846889315D+00 / D31.14) P0890560
898   FORMAT(9H0 X= 6.0 ,  31H -0.27941549819892587281156D+00 / D31.14) P0890570
899   FORMAT(9H0 X=(2PI),  31H  0.00000000000000000000000     / D31.14) P0890580
7890  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0890590
     A PRINTED TO ,9H14 DIGITS)                                         P0890600
C*****    END OF TEST SEGMENT 089                                       P0890610
C*****  WHEN EXECUTING ONLY SEGMENT 089, THE  STOP  AND  END  CARDS     P0890620
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0890630
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0890640
C=    STOP                                                              P0890650
C=    END                                                               P0890660
      STOP                                                              P089C1
      END                                                               P089C2
C*********************************************************************** P0900010
C*****                                                                  P0900020
C*****                  CSICO - (090)                                   P0900030
C*****                                                                  P0900040
C*********************************************************************** P0900050
C*****  GENERAL PURPOSE                                         ASA REF P0900060
C*****    TO TEST BASIC EXTERNAL FUNCTIONS  -CSIN- AND -CCOS-    8.3.3  P0900070
C*****    COMPLEX SINE AND COSINE                               TABLE 4P0900080
C*****    INTRINSIC FUNCTION CMPLX ASSUMED WORKING                      P0900090
C*****                                                                  P0900100
C*****  S P E C I F I C A T I O N S  SEGMENT 090                        P0900110
C*****                                                                  P0012090
C*****  WHEN EXECUTING ONLY SEGMENT 090, THE SPECIFICATION STATEMENTS   P0012095
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0012100
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012105
C*****                                                                  P0012110
C=    DIMENSION L1I (10)                                                P0012115
C=    COMPLEX AVC, BVC                                                  P0012120
      DIMENSION L1I (10)                                                P090A1
      COMPLEX AVC, BVC                                                  P090A2
C*****                                                                  P0012125
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0900120
C*****                                                                  P0071810
C*****  WHEN EXECUTING ONLY SEGMENT 090, THE FOLLOWING STATEMENT        P0071815
C*****  NUVI = 6 MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.           P0071820
C=    NUVI = 6                                                          P0071825
      NUVI = 6                                                          P090B1
C*****                                                                  P0071830
      WRITE (NUVI, 900)                                                 P0900130
900   FORMAT(15H1 CSICO - (090)//40H  BASIC EXTERNAL FUNCTIONS -CSIN , CP0900140
     1COS- //39H  (TRIG. SINE AND COSINE -TYPE COMPLEX)//26H  ASA REF 8.P0900150
     23.3 (TABLE 4) //10H  FUNCTION, 10X,7HRESULTS //)                  P0900160
      DATA LAZVI,LBZVI, LCZVI,LDZVI/2H0( ,2H, ,2H1/,1H)/                P0900170
      DATA L1I(1),L1I(2),L1I(3),L1I(4),L1I(5)/                          P0900180
     -       2H1 ,  2H2 ,  2H3 ,  2H4 ,  2H5 /,                         P0900190
     -      L1I(6),L1I(7),L1I(8),L1I(9),L1I(10)/                        P0900200
     -       2H6 ,  2H7 ,  2H8 ,  2H9 ,  2H10 /                         P0900210
      AVC = (1.0,1.0)                                                   P0900220
      BVC = CSIN (AVC)                                                  P0900230
      WRITE(NUVI, 901) BVC                                              P0900240
      BVC = CCOS(AVC)                                                   P0900250
      WRITE (NUVI, 902) BVC                                             P0900260
      IVI = 0                                                           P0900270
905   IVI = IVI + 1                                                     P0900280
      AVS = IVI                                                         P0900290
      BVS = 1. / AVS                                                    P0900300
      AVC = CMPLX (AVS,BVS)                                             P0900310
      BVC = CSIN(AVC) ** 2 + CCOS(AVC) ** 2                             P0900320
      WRITE(NUVI, 904) LAZVI, L1I(IVI),LBZVI,LCZVI,L1I(IVI),LDZVI, BVC  P0900330
904   FORMAT(   A2,A2, A2,A2,A2,A1,4X,2F12.7)                           P0900340
      IF(IVI - 10) 905, 906, 906                                        P0900350
906   CONTINUE                                                          P0900360
901   FORMAT(/13H  TABLE VALUE,4X,22H 1.2984576   0.6349639 /17H  CSIN(1P0900370
     1.,1.) =  ,F10.7,F12.7)                                            P0900380
902   FORMAT(/13H  TABLE VALUE,4X,22H 0.8337300  -0.9888977 /17H  CCOS(1P0900390
     1.,1.) =  ,F10.7,F12.7 ///35H  CSIN(X)**2 + CCOS(X)**2 = 1.0,0.0 / P0900400
     2 40H0 ARGUMENT     RESULTS SHOULD BE 1.0,0.0 )                    P0900410
C*****    END OF TEST SEGMENT 090                                       P0900420
C*****  WHEN EXECUTING ONLY SEGMENT 090, THE STOP AND END CARDS         P0900430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0900440
C*****  IN COLUMNS  1  AND  2 REMOVED.                                  P0900450
C=    STOP                                                              P0900460
C=    END                                                               P0900470
      STOP                                                              P090C1
      END                                                               P090C2
C***********************************************************************P0910010
C*****                                                                  P0910020
C*****                       COSNS - 091                                P0910030
C*****                                                                  P0910040
C***********************************************************************P0910050
C*****  GENERAL PURPOSE                                         ASA REFP0910060
C*****     TO TEST BASIC EXTERNAL FUNCTION - COS -              8.3.3  P0910070
C*****     TRIGONOMETRIC COSINE - TYPE REAL                     TABLE 4P0910080
C*****     SAME AS SEGMENT     EXCEPT FOR COSINE                        P0910090
C*****     INTRINSIC FUNCTION SNGL ASSUMED WORKING                      P0910100
C*****     ARGUMENTS FROM 0 TO 2 PI                                     P0910110
C*****                                                                  P0910120
C*****  S P E C I F I C A T I O N S  SEGMENT 091                        P0910130
C*****                                                                  P0012130
C*****  WHEN EXECUTING ONLY SEGMENT 091, THE SPECIFICATION STATEMENTS   P0012135
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0012140
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012145
C*****                                                                  P0012150
C=    DOUBLE PRECISION AVD, BVD, CVD, DVD, EVD, PIVD                    P0012155
      DOUBLE PRECISION AVD, BVD, CVD, DVD, EVD, PIVD                    P091A1
C*****                                                                  P0012160
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0910140
C*****                                                                  P0071840
C*****  WHEN EXECUTING ONLY SEGMENT 091, THE FOLLOWING STATEMENT        P0071845
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071850
C=    NUVI = 6                                                          P0071855
      NUVI = 6                                                          P091B1
C*****                                                                  P0071860
910   FORMAT(15H1 COSNS - (091)//31H  BASIC EXTERNAL FUNCTION -COS-     P0910150
     1//35H  (TRIGONOMETRIC COSINE -TYPE REAL)                          P0910160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0910170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0910180
      WRITE (NUVI, 910)                                                 P0910190
C*****    HEADER FOR SEGMENT 091 WRITTEN                                P0910200
      AVD = 3.140625D+0                                                 P0910210
      BVD = 0.9613037109375D-3                                          P0910220
      CVD = 0.57220458984375D-5                                         P0910230
      DVD = 0.596046447753906D-6                                        P0910240
      EVD = 0.31786509547056D-7                                         P0910250
C*****PI IS SUM OF AVD TO EVD, PARTS ARE EXPRESSED IN SUMS OF POWERS OF P0910260
C*****2, TO PERMIT A POSSIBLE 20 DECIMAL DIGIT ARGUMENT TO BE CREATED   P0910270
      PIVD = EVD + DVD + CVD + BVD + AVD                                P0910280
      AVS = 1.0                                                         P0910290
      CVS = 2.0                                                         P0910300
      BVS = COS(CVS - 2.0 * AVS)                                        P0910310
      WRITE (NUVI, 911) BVS                                             P0910320
      BVS = COS(AVS)                                                    P0910330
      WRITE (NUVI, 912) BVS                                             P0910340
      BVS = COS(CVS)                                                    P0910350
      WRITE (NUVI, 913) BVS                                             P0910360
      BVS = COS(AVS + CVS)                                              P0910370
      WRITE (NUVI, 914) BVS                                             P0910380
      BVS = COS(SNGL(PIVD))                                             P0910390
      WRITE (NUVI, 915) BVS                                             P0910400
      BVS = COS(2. * CVS)                                               P0910410
      WRITE (NUVI, 916) BVS                                             P0910420
      BVS = COS(2.0 + CVS + AVS)                                        P0910430
      WRITE (NUVI, 917) BVS                                             P0910440
      BVS = COS(CVS * (AVS + CVS))                                      P0910450
      WRITE (NUVI, 918) BVS                                             P0910460
      BVS = COS(SNGL(2.0D0 * PIVD))                                     P0910470
      WRITE (NUVI, 919) BVS                                             P0910480
      WRITE (NUVI, 7910)                                                P0910490
911   FORMAT( 9H0 X= 0.0 ,5X,15H+1.000000000000  /14X, F10.7)           P0910500
912   FORMAT( 9H0 X= 1.0 ,5X,15H+0.540302305868  /14X, F10.7)           P0910510
913   FORMAT( 9H0 X= 2.0 ,5X,15H-0.416146836547  /14X, F10.7)           P0910520
914   FORMAT( 9H0 X= 3.0 ,5X,15H-0.989992496600  /14X, F10.7)           P0910530
915   FORMAT( 9H0 X= (PI),5X,15H-1.000000000000  /14X, F10.7)           P0910540
916   FORMAT(9H0 X= 4.0 ,5X,15H-0.653643620864  /14X, F10.7)            P0910550
917   FORMAT( 9H0 X= 5.0 ,5X,15H+0.283662185463  /14X, F10.7)           P0910560
918   FORMAT( 9H0 X= 6.0 ,5X,15H+0.960170286650  /14X, F10.7)           P0910570
919   FORMAT( 9H0 X=(2PI),5X,15H+1.000000000000  /14X, F10.7)           P0910580
7910  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0910590
     1 PRINTED TO ,8H7 OIGITS)                                          P0910600
C*****    END OF TEST SEGMENT 091                                       P0910610
C*****  WHEN EXECUTING ONLY SEGMENT 091, THE  STOP  AND  END  CARDS     P0910620
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0910630
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0910640
C=    STOP                                                              P0910650
C=    END                                                               P0910660
      STOP                                                              P091C1
      ENO                                                               P091C2
C***********************************************************************P0920010
C*****                                                                  P0920020
C*****                       OPCOS - (092)                              P0920030
C*****                                                                  P0920040
C***********************************************************************P0920050
C*****  GENERAL PURPOSE                                          ASA REFP0920060
C*****     TO TEST BASIC EXTERNAL FUNCTION - OCOS -              8.3.3  P0920070
C*****     TRIGONOMETRIC COSINE -TYPE DOUBLE PRECISION           TABLE 4P0920080
C*****     SAME AS SEGMENT 091 EXCEPT D.P.                              P0920090
C*****     INTRINSIC FUNCTION DMAX1 ASSUMED WORKING                     P0920100
C*****     ARGUMENTS FROM 0 TO 2 PI                                     P0920110
C*****                                                                  P0920120
C*****  S P E C I F I C A T I O N S  SEGMENT 092                        P0920130
C*****                                                                  P0012170
C*****  WHEN EXECUTING ONLY SEGMENT 092, THE SPECIFICATION STATEMENTS   P0012175
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0012180
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012185
C*****                                                                  P0012190
C=    OOUBLE PRECISION AVD, BVD, CVD, DVO, EVD, FVO, GVO, PIVD, XVD     P0012195
      OOUBLE PRECISION AVD, BVD, CVD, DVD, EVD, FVD, GVD, PIVD, XVD     P092A1
C*****                                                                  P0012200
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0920140
C*****                                                                  P0071870
C*****  WHEN EXECUTING ONLY SEGMENT 092, THE FOLLOWING STATEMENT        P0071875
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071880
C=    NUVI = 6                                                          P0071885
      NUVI = 6                                                          P092B1
C*****                                                                  P0071890
920   FORMAT(15H1 DPCOS - (092)//32H  BASIC EXTERNAL FUNCTION -DCOS-    P0920150
     1//35H  (TRIGONOMETRIC COSINE -TYPE D.P.)                          P0920160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0920170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0920180
      WRITE (NUVI, 920)                                                 P0920190
      AVD = 3.140625D+0                                                 P0920200
      BVD = 0.9613037109375D-3                                          P0920210
      CVD = 0.57220458984375D-5                                         P0920220
      DVD = 0.59604644775390 6D-6                                       P0920230
      EVD = 0.31786509547056D-7                                         P0920240
C*****PI IS SUM OF AVD TO EVD, PARTS ARE EXPRESSED IN SUMS OF POWERS OF P0920250
C*****2, TO PERMIT A POSSIBLE 20 DECIMAL DIGIT ARGUMENT TO BE CREATED    P0920260
      PIVD = EVD + DVD + CVD + BVD + AVD                                P0920270
      FVD = 1.0D0                                                       P0920280
      GVD = 2.0D0                                                       P0920290
      XVD = DCOS(GVD - 2.0D0 * FVD)                                     P0920300
      WRITE (NUVI, 921) XVD                                             P0920310
      XVD = DCOS(FVD)                                                   P0920320
      WRITE (NUVI, 922) XVD                                             P0920330
      XVD = DCOS(GVD)                                                   P0920340
      WRITE (NUVI, 923) XVD                                             P0920350
      XVD = DCOS(GVD + FVD)                                             P0920360
      WRITE (NUVI, 924) XVD                                             P0920370
      XVD = DCOS(PIVD)                                                  P0920380
      WRITE (NUVI, 925) XVD                                             P0920390
      XVD = DCOS(2. * GVD)                                              P0920400
      WRITE (NUVI, 926) XVD                                             P0920410
      XVD = DCOS(2.0 + FVD + GVD)                                       P0920420
      WRITE (NUVI, 927) XVD                                             P0920430
      XVD = DCOS(GVD * (FVD + GVD))                                     P0920440
      WRITE (NUVI, 928) XVD                                             P0920450
      XVD = DCOS(DMAX1(2.0D0 * PIVD, GVD))                              P0920460
      WRITE (NUVI, 929) XVD                                             P0920470
      WRITE (NUVI, 7992)                                                P0920480
921   FORMAT(9H0 X= 0.0 ,31H +0.10000000000000000000000D+01 / D31.14)   P0920490
922   FORMAT(9H0 X= 1.0 ,31H +0.54030230586813971740094D+00 /D31.14)    P0920500
923   FORMAT(9H0 X= 2.0 ,31H -0.41614683654714238699757D+00 / D31.14)   P0920510
924   FORMAT(9H0 X= 3.0 ,31H -0.98999249660044545727157D+00 / D31.14)   P0920520
925   FORMAT(9H0 X= (PI),31H -0.10000000000000000000000D+01 / D31.14)   P0920530
926   FORMAT(9H0 X= 4.0 ,31H -0.65364362086361191463917D+00 / D31.14)   P0920540
927   FORMAT(9H0 X= 5.0 ,31H +0.28366218546322626446664D+00 / D31.14)   P0920550
928   FORMAT(9H0 X= 6.0 ,31H +0.96017028665036602054565D+00 / D31.14)   P0920560
929   FORMAT(9H0 X=(2PI),31H +0.10000000000000000000000D+01 / D31.14)   P0920570
7992  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0920580
     A PRINTED TO ,9H14 DIGITS)                                         P0920590
C*****     END OF SEGMENT 092                                           P0920600
C*****  WHEN EXECUTING ONLY SEGMENT 092, THE  STOP  AND  END  CARDS     P0920610
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0920620
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0920630
C=    STOP                                                              P0920640
C=    END                                                               P0920650
      STOP                                                              P092C1
      END                                                               P092C2
C***********************************************************************P0940010
C*****                                                                  P0940020
C*****                      TANGH - 094                                 P0940030
C*****                                                                  P0940040
C***********************************************************************P0940050
C*****  GENERAL PURPOSE                                          ASA REFP0940060
C*****    TO TEST BASIC EXTERNAL FUNCTION - TANH -               8.3.3  P0940070
C*****      HYPERBOLIC TANGENT -TYPE REAL                               P0940080
C*****      USED IN SIMPLE ARITHMETIC EXPRESSIONS                       P0940090
C*****      INTRINSIC FUNCTIONS ABS,FLOAT,AMINO,AMAX0,INT               P0940100
C*****      ASSUMED WORKING                                             P0940110
C*****      ARGUMENTS FROM 0.0 TO 8.0                                   P0940120
C*****                                                                  P0940130
C*****  OUTPUT  TAPE  ASSIGNMENT STATEMENT.  NO INPUT TAPE.             P0940140
C*****  WHEN EXECUTING ONLY SEGMENT 094, THE FOLLOWING STATEMENT        P0071900
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0071905
C*****                                                                  P0071910
C=    NUVI = 6                                                          P0071915
      NUVI = 6                                                          P094B1
940   FORMAT(15H1 TANGH - (094)//32H  BASIC EXTERNAL FUNCTION -TANH-    P0940150
     1//33H  (HYPERBOLIC TANGENT -TYPE REAL)                            P0940160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0940170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0940180
      WRITE (NUVI, 940)                                                 P0940190
C*****    HEADER FOR SEGMENT 094 WRITTEN                                P0940200
      AVS = 2.0                                                         P0940210
      CVS = -0.5                                                        P0940220
      IVI = 6                                                           P0940230
      BVS = TANH(FLOAT(IVI) - 3.0 * AVS)                                P0940240
      WRITE (NUVI, 941) BVS                                             P0940250
      BVS = TANH(AVS)                                                   P0940260
      WRITE (NUVI, 942) BVS                                             P0940270
      BVS = TANH(AVS + ABS(CVS))                                        P0940280
      WRITE (NUVI, 943) BVS                                             P0940290
      BVS = TANH(AMINO(IVI,8) - AVS)                                    P0940300
      WRITE (NUVI, 944) BVS                                             P0940310
      BVS = TANH(AMAX0(IVI,INT(AVS)))                                   P0940320
      WRITE (NUVI, 945) BVS                                             P0940330
      BVS = TANH(AVS ** 4 / AVS)                                        P0940340
      WRITE (NUVI, 946) BVS                                             P0940350
      WRITE (NUVI, 947)                                                 P0940360
941   FORMAT(7H0 X=0.0,5X,12H0.0000000000 /F21.7)                       P0940370
942   FORMAT(7H0 X=2.0,5X,12H0.9640275801 /F21.7)                       P0940380
943   FORMAT(7H0 X=2.5,5X,12H0.9866142982 /F21.7)                       P0940390
944   FORMAT(7H0 X=4.0,5X,12H0.9993292997 /F21.7)                       P0940400
945   FORMAT(7H0 X=6.0,5X,12H0.9999877117 /F21.7)                       P0940410
946   FORMAT(7H0 X=8.0,5X,12H0.9999997749 /F21.7)                       P0940420
947   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0940430
     1 PRINTED TO , 8H7 OIGITS )                                        P0940440
C*****    END OF TEST SEGMENT 094                                       P0940450
C*****  WHEN EXECUTING ONLY SEGMENT 094, THE  STOP  AND  ENO  CAROS     P0940460
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0940470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0940480
C=    STOP                                                              P0940490
C=    ENO                                                               P0940500
      STOP                                                              P094C1
      END                                                               P094C2
C***********************************************************************P0950010
C*****                                                                  P0950020
C*****                        SQROT - (095)                             P0950030
C*****                                                                  P0950040
C***********************************************************************P0950050
C*****  GENERAL PURPOSE                                         ASA REFP0950060
C*****      TO TEST BASIC EXTERNAL FUNCTION - SQRT -            8.3.3  P0950070
C*****      (SQUARE ROOT - TYPE REAL)                           TABLE 4P0950080
C*****      USEO IN SIMPLE ARITHMETIC EXPRESSIONS                       P0950090
C*****      INTRINSIC FUNCTIONS FLOAT,INT,AMINO,MAXO                    P0950100
C*****      ASSUMEO WORKING                                             P0950110
C*****      ARGUMENTS ARE ALL PRIME NUMBERS                             P0950120
C*****                                                                  P0950130
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0950140
C*****                                                                  P0071920
C*****  WHEN EXECUTING ONLY SEGMENT 095, THE FOLLOWING STATEMENT        P0071925
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVEO.          P0071930
C=    NUVI = 6                                                          P0071935
      NUVI = 6                                                          P095B1
C*****                                                                  P0071940
950   FORMAT(15H1 SQROT - (095)//32H  BASIC EXTERNAL FUNCTION -SQRT-    P0950150
     1//26H  (SQUARE ROOT -TYPE REAL)                                   P0950160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0950170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0950180
      WRITE (NUVI, 950)                                                 P0950190
C*****    HEAOER FOR SEGMENT 095 WRITTEN                                P0950200
      AVS = 2.0                                                         P0950210
      IVI = 3                                                           P0950220
      CVS = 17.0                                                        P0950230
      BVS = SQRT(FLOAT(( IVI + INT(AVS)) / 2))                          P0950240
      WRITE (NUVI, 951) BVS                                             P0950250
      BVS = SQRT(AMINO(MAXO(IVI,2), INT(CVS)))                          P0950260
      WRITE (NUVI, 952) BVS                                             P0950270
      BVS = SQRT(CVS)                                                   P0950280
      WRITE (NUVI, 953) BVS                                             P0950290
      BVS = SQRT(2.0 * CVS - FLOAT(IVI))                                P0950300
      WRITE (NUVI, 954) BVS                                             P0950310
      BVS = SQRT(FLOAT(IVI + 1) + 5.0 * CVS)                            P0950320
      WRITE (NUVI, 955) BVS                                             P0950330
      WRITE (NUVI, 956)                                                 P0950340
951   FORMAT ( 8H0 X= 2.0,4X,16H1.41421356237310 / F21.7)               P0950350
952   FORMAT ( 8H0 X= 3.0,4X,16H1.73205080756888 / F21.7)               P0950360
953   FORMAT ( 8H0 X=17.0,4X,16H4.12310562561766 / F21.7)               P0950370
954   FORMAT ( 8H0 X=31.0,4X,16H5.56776436283002 / F21.7)               P0950380
955   FORMAT ( 8H0 X=89.0,4X,16H9.43398113205660 / F21.7)               P0950390
956   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0950400
     1 PRINTED TO , 8H7 DIGITS )                                        P0950410
C*****    END OF TEST SEGMENT 095                                       P0950420
C*****  WHEN EXECUTING ONLY SEGMENT 095, THE  STOP  AND  END  CARDS     P0950430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0950440
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0950450
C=    STOP                                                              P0950460
C=    END                                                               P0950470
      STOP                                                              P095C1
      END                                                               P095C2
C***********************************************************************P0960010
C*****                                                                  P0960020
C*****                       DSQRO - (096)                              P0960030
C*****                                                                  P0960040
C***********************************************************************P0960050
C*****  GENERAL PURPOSE                                          ASA REFP0960060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DSQRT -             8.3.3  P0960070
C*****     (SQUARE ROOT - TYPE D.P.)                             TABLE 4P0960080
C*****     USED IN SIMPLE EXPRESSIONS                                   P0960090
C*****     INTRINSIC FUNCTIONS DBLE,IABS,FLOAT ASSUMED WORKING          P0960100
C*****     ARGUMENTS ARE ALL PRIME NUMBERS                              P0960110
C*****                                                                  P0960120
C*****  S P E C I F I C A T I O N S  SEGMENT 096                        P0960130
C*****                                                                  P0012210
C*****  WHEN EXECUTING ONLY SEGMENT 096, THE SPECIFICATION STATEMENTS   P0012215
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P0012220
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012225
C*****                                                                  P0012230
C=    DOUBLE PRECISION BVD                                              P0012235
      DOUBLE PRECISION BVD                                              P096A1
C*****                                                                  P0012240
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0960140
C*****                                                                  P0071950
C*****  WHEN EXECUTING ONLY SEGMENT 096, THE FOLLOWING STATEMENT        P0071955
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0071960
C=    NUVI = 6                                                          P0071965
      NUVI = 6                                                          P096B1
C*****                                                                  P0071970
960   FORMAT(15H1 DSQRO - (096)//33H  BASIC EXTERNAL FUNCTION -DSQRT-   P0960150
     1//26H  (SQUARE ROOT -TYPE D.P.)                                   P0960160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0960170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0960180
      WRITE (NUVI, 960)                                                 P0960190
C*****    HEADER FOR SEGMENT 096 WRITTEN                                P0960200
      AVS = 3.0                                                         P0960210
      IVI = -2                                                          P0960220
      CVS = 17.0                                                        P0960230
      BVD = DSQRT(DBLE(FLOAT(IABS(IVI)) + AVS - 3.0))                   P0960240
      WRITE (NUVI, 961) BVD                                             P0960250
      BVD = DSQRT(0.0D0 + AVS)                                          P0960260
      WRITE (NUVI, 962) BVD                                             P0960270
      BVD = DSQRT(CVS - AVS + 3.0D0)                                    P0960280
      WRITE (NUVI, 963) BVD                                             P0960290
      BVD = DSQRT(2.0D0 * CVS - DBLE(AVS))                              P0960300
      WRITE (NUVI, 964) BVD                                             P0960310
      BVD = DSQRT(DBLE(FLOAT(-IVI)+ AVS) * CVS + FLOAT(IVI ** 2))       P0960320
      WRITE (NUVI, 965) BVD                                             P0960330
      WRITE (NUVI, 966)                                                 P0960340
961   FORMAT ( 8H0 X= 2.0,5X,25H1.41421356237309504880+00/8X,1PD24.13)  P0960350
962   FORMAT ( 8H0 X= 3.0,5X,25H1.7320508075688772935D+00/8X,1PD24.13)  P0960360
963   FORMAT ( 8H0 X=17.0,5X,25H4.1231056256176605498D+00/8X,1PD24.13)  P0960370
964   FORMAT ( 8H0 X=31.0,5X,25H5.5677643628300219221D+00/8X,1PD24.13)  P0960380
965   FORMAT ( 8H0 X=89.0,5X,25H9.4339811320566038113D+00/8X,1PD24.13)  P0960390
966   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0960400
     A PRINTED TO ,9H14 DIGITS)                                         P0960410
C*****    END OF TEST SEGMENT 096                                       P0960420
C*****  WHEN EXECUTING ONLY SEGMENT 096, THE  STOP  AND  END  CARDS     P0960430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0960440
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0960450
C=    STOP                                                              P0960460
C=    END                                                               P0960470
      STOP                                                              P096C1
      END                                                               P096C2
C***********************************************************************P0970010
C*****                                                                  P0970020
C*****                       CSQRO - (097)                              P0970030
C*****                                                                  P0970040
C***********************************************************************P0970050
C*****  GENERAL PURPOSE                                         ASA REFP0970060
C*****                                                                  P0970070
C*****     TO TEST BASIC EXTERNAL FUNCTION  -CSQRT-             8.3.3   P0970080
C*****     (SQUARE ROOT OF A COMPLEX NUMBER )                   TABLE 4P0970090
C*****     ARGUMENTS ARE EP1C(11)  TO  EP1C(20)                         P0970100
C*****     EXPECTED RESULTS ARE EP1C(1)  TO  EP1C(10)                   P0970110
C*****  S P E C I F I C A T I O N S  SEGMENT 097                        P0970120
C*****                                                                  P0012250
C*****  WHEN EXECUTING ONLY SEGMENT 097 THE SPECIFICATION STATEMENTS    P0012255
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0012260
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012265
C*****                                                                  P0012270
C=    COMPLEX EP1C(30), AVC, BVC                                        P0012275
      COMPLEX EP1C(30), AVC, BVC                                        P097A1
C*****                                                                  P0012280
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P0970130
C*****                                                                  P0071980
C*****  WHEN EXECUTING ONLY SEGMENT 097, THE FOLLOWING STATEMENT        P0071985
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0071990
C=    NUVI = 6                                                          P0071995
      NUVI = 6                                                          P097B1
C*****                                                                  P0072000
      WRITE (NUVI, 970)                                                 P0970140
970   FORMAT(15H1 CSQRO - (097)//33H  BASIC EXTERNAL FUNCTION -CSQRT-   P0970150
     1//29H  (SQUARE ROOT -TYPE COMPLEX)//27H  ASA REF.- 8.3.3 (TABLE 4)P0970160
     2//24H  LINE 1 OF EACH PAIR IS /20H  THE EXPECTED VALUE //9H  RESULP0970170
     3T )                                                               P0970180
C*****    INITIALIZE EP1C (EXACT VALUES)                                P0970190
      EP1C(1) = (0.9950042,0.0998334)                                   P0970200
      EP1C(2) = (0.9800666,0.1986693)                                   P0970210
      EP1C(3) = (0.9553365,0.2955202)                                   P0970220
      EP1C(4) = (0.9210610,0.3894183)                                   P0970230
      EP1C(5) = (0.8775826,0.4794255)                                   P0970240
      EP1C(6) = (0.8253356,0.5646425)                                   P0970250
      EP1C(7) = (0.7648422,0.6442177)                                   P0970260
      EP1C(8) = (0.6967067,0.7173561)                                   P0970270
      EP1C(9) = (0.5403023,0.8414710)                                   P0970280
      EP1C(10) = (0.4161468,-0.9092974)                                 P0970290
      EP1C(11) = (0.9800666,0.1986693)                                  P0970300
      EP1C(12) = (0.9210610,0.3894183)                                  P0970310
      EP1C(13) = (0.8253356,0.5646425)                                  P0970320
      EP1C(14) = (0.6967067,0.7173561)                                  P0970330
      EP1C(15) = (0.5403023,0.8414710)                                  P0970340
      EP1C(16) = (0.3623577,0.9320391)                                  P0970350
      EP1C(17) = (0.1699671,0.9854497)                                  P0970360
      EP1C(18) = (-0.0291995,0.9995736)                                 P0970370
      EP1C(19) = (-0.4161468,0.9092974)                                 P0970380
      EP1C(20) = (-0.6536436,-0.7568025)                                P0970390
      IVI = 0                                                           P0970400
971   JVI = 1                                                           P0970410
972   IVI = IVI + 1                                                     P0970420
      JVI = JVI + 1                                                     P0970430
      AVC = CSQRT(EP1C(IVI + 10) * (10. ** ((2 * JVI) - 8)))            P0970440
      BVC =  EP1C(IVI) * 10. ** (JVI - 4)                               P0970450
      WRITE (NUVI, 973) BVC, AVC                                        P0970460
973   FORMAT( 2H0 2E14.7/2X,2E14.7)                                     P0970470
      IF (JVI - 6) 972, 974, 974                                        P0970480
974   IF (IVI - 10) 971, 975, 975                                       P0970490
975   WRITE (NUVI, 976)                                                 P0970500
976   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/13H  CALCULATIONP0970510
     1)                                                                 P0970520
C*****    END OF TEST SEGMENT 097                                       P0970530
C*****  WHEN EXECUTING ONLY SEGMENT 097 THE STOP AND END CARDS          P0970540
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0970550
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0970560
C=    STOP                                                              P0970570
C=    END                                                               P0970580
      STOP                                                              P097C1
      END                                                               P097C2
C***********************************************************************P0980010
C*****                                                                  P0980020
C*****                       ARCTG - (098)                              P0980030
C*****                                                                  P0980040
C***********************************************************************P0980050
C*****  GENERAL PURPOSE                                          ASA REFP0980060
C*****     TO TEST BASIC EXTERNAL FUNCTION - ATAN -              8.3.3  P0980070
C*****     (TRIGONOMETRIC ARCTANGENT, SINGLE ARGUMENT -TYPE REAL)TABLE 4P0980080
C*****     USED IN SIMPLE ARITHMETIC EXPRESSIONS                        P0980090
C*****     INTRINSIC FUNCTION ABS,FLOAT,AMAX1,INT                       P0980100
C*****       ASSUMED WORKING                                            P0980110
C*****     ARGUMENTS ARE POWERS (OR SUMS) OF 2                          P0980120
C*****                                                                  P0980130
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0980140
C*****                                                                  P0072010
C*****  WHEN EXECUTING ONLY SEGMENT 098, THE FOLLOWING STATEMENT        P0072015
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072020
C=    NUVI = 6                                                          P0072025
      NUVI = 6                                                          P098B1
C*****                                                                  P0072030
      WRITE (NUVI, 980)                                                 P0980150
980   FORMAT(15H1 ARCTG - (098)//32H  BASIC EXTERNAL FUNCTION -ATAN-    P0980160
     1//25H  (ARCTANGENT -TYPE REAL)                                    P0980170
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0980180
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0980190
C*****    HEADER FOR SEGMENT 098 WRITTEN                                P0980200
      AVS = .125                                                        P0980210
      CVS = -.25                                                        P0980220
      IVI = 2                                                           P0980230
      BVS = ATAN(AMAX1(AVS,CVS))                                        P0980240
      WRITE (NUVI, 981) BVS                                             P0980250
      BVS = ATAN(AVS * 2.0)                                             P0980260
      WRITE(NUVI, 982) BVS                                              P0980270
      BVS = ATAN (ABS(CVS) + AVS)                                       P0980280
      WRITE(NUVI, 983) BVS                                              P0980290
      BVS = ATAN(-CVS * AMAX0(IVI, INT(AVS)))                           P0980300
      WRITE(NUVI, 984) BVS                                              P0980310
      BVS = ATAN (FLOAT(IVI) * CVS - (2.0 * AVS))                       P0980320
      WRITE (NUVI, 985) BVS                                             P0980330
      BVS = ATAN(1.0)                                                   P0980340
      WRITE (NUVI, 986) BVS                                             P0980350
      WRITE (NUVI, 987)                                                 P0980360
981   FORMAT(10H0 X= 0.125,5X,15H 0.124354994547,/10X,F15.7)            P0980370
982   FORMAT(10H0 X= 0.250,5X,15H 0.244978663127,/10X,F15.7)            P0980380
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983   FORMAT(10H0 X= 0.375,5X,15H 0.358770670271,/10X,F15.7)             P0980390
984   FORMAT(10H0 X= 0.500,5X,15H 0.463647609001,/10X,F15.7)             P0980400
985   FORMAT(10H0 X=-0.750,5X,15H-0.643501108793,/10X,F15.7)             P0980410
986   FORMAT(10H0 X= 1.000,5X,15H 0.785398163397,/10X,F15.7)             P0980420
987   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0980430
     1 PRINTED TO ,8H7 DIGITS )                                          P0980440
C*****    END OF TEST SEGMENT 098                                        P0980450
C*****  WHEN EXECUTING ONLY SEGMENT 098, THE STOP AND END CARDS         P0980460
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                   P0980470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                  P0980480
C=    STOP                                                               P0980490
C=    END                                                                P0980500
      STOP                                                               P098C1
      END                                                                P098C2
C***********************************************************************P0990010
C*****                                                                  P0990020
C*****                       OACTG - (099)                              P0990030
C*****                                                                  P0990040
C***********************************************************************P0990050
C*****  GENERAL PURPOSE                                          ASA REFP0990060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DATAN -             8.3.3  P0990070
C*****     (TRIGONOMETRIC ARCTANGENT,SINGLE ARGUMENT -TYPE O.P.) TABLE 4P0990080
C*****     USEO IN SIMPLE ARITHMETIC EXPRESSIONS                        P0990090
C*****     INTRINSIC FUNCTIONS DSIGN,FLOAT,DBLE ASSUMED WORKING         P0990100
C*****     ARGUMENTS ARE POWERS (OR SUMS) OF 2                          P0990110
C*****                                                                  P0990120
C*****  S P E C I F I C A T I O N S  SEGMENT 099                        P0990130
C*****                                                                  P0012290
C*****  WHEN EXECUTING ONLY SEGMENT 099, THE SPECIFICATION STATEMENTS   P0012295
C*****  WHICH APPEAR AS COMMENT CARDS  MUST HAVE THE C=                 P0012300
C*****  IN COLUMNS 1  AND  2 REMOVED.                                   P0012305
C*****                                                                  P0012310
C=    DOUBLE PRECISION AVD, BVD, CVD                                    P0012315
      DOUBLE PRECISION AVO, BVD, CVO                                    P099A1
C*****                                                                  P0012320
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P0990140
C*****                                                                  P0072040
C*****  WHEN EXECUTING ONLY SEGMENT 099, THE FOLLOWING STATEMENT        P0072045
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0072050
C=    NUVI = 6                                                          P0072055
      NUVI = 6                                                          P099B1
C*****                                                                  P0072060
C*****     HEADER FOR SEGMENT 099 WRITTEN                               P0990150
      WRITE(NUVI, 990)                                                  P0990160
990   FORMAT(15H1 DACTG - (099)//33H  BASIC EXTERNAL FUNCTION -DATAN-   P0990170
     1//25H  (ARCTANGENT -TYPE D.P.)                                    P0990180
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P0990190
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P0990200
      AVD = -.125D0                                                     P0990210
      CVD = .25D0                                                       P0990220
      IVI = 2                                                           P0990230
      BVO = OATAN(OSIGN(AVD,CVO))                                       P0990240
      WRITE (NUVI, 991) BVD                                             P0990250
      BVD = OATAN(2.0 * (-AVO))                                         P0990260
      WRITE(NUVI, 992) BVO                                              P0990270
      BVO = OATAN(CVD - AVO)                                            P0990280
      WRITE(NUVI, 993) BVO                                              P0990290
      BVO = OATAN(OBLE(FLOAT(IVI) / 4.0))                               P0990300
      WRITE (NUVI, 994) BVO                                             P0990310
      BVD = DATAN (OSIGN(1.000 - CVD, AVD))                             P0990320
      WRITE(NUVI, 995) BVD                                              P0990330
      BVD = DATAN(DBLE(FLOAT(IVI ** 2)) * CVD)                          P0990340
      WRITE (NUVI, 996) BVD                                             P0990350
      WRITE (NUVI, 997)                                                 P0990360
991   FORMAT(10H0 X= 0.125,5X,19H 0.124354994547D+00 /10X,D24.12)       P0990370
992   FORMAT(10H0 X= 0.250,5X,19H 0.244978663127D+00 /10X,D24.12)       P0990380
993.  FORMAT(10H0 X= 0.375,5X,19H 0.358770670271D+00 /10X,D24.12)       P0990390
994   FORMAT(10H0 X= 0.500,5X,19H 0.463647609001D+00 /10X,D24.12)       P0990400
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995   FORMAT(10H0 X=-0.750,5X,19H-0.643501108793D+00 /10X,D24.12)       P0990410
996   FORMAT(10H0 X= 1.000,5X,19H 0.785398163397D+00 /10X,D24.12)       P0990420
997   FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP0990430
     1 PRINTED TO ,9H12 DIGITS )                                        P0990440
C*****    END OF TEST SEGMENT 099                                       P0990450
C*****  WHEN EXECUTING ONLY SEGMENT 099, THE STOP AND END CARDS         P0990460
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0990470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0990480
C=    STOP                                                              P0990490
C=    END                                                               P0990500
      STOP                                                              P099C1
      END                                                               P099C2
C***********************************************************************P1000010
C*****                                                                  P1000020
C*****                         ACTG2 - (100)                            P1000030
C*****                                                                  P1000040
C***********************************************************************P1000050
C*****  GENERAL PURPOSE                                          ASA REFP1000060
C*****      TO TEST BASIC EXTERNAL FUNCTION - ATAN2 -            8.3.3  P1000070
C*****      (TRIGONOMETRIC ARCTANGENT, TWO ARGUMENTS -TYPE REAL)  TABLE 4P1000080
C*****      USED IN SIMPLE ARITHMETIC EXPRESSIONS                       P1000090
C*****      INTRINSIC FUNCTIONS AMIN1,FLOAT,AMAX0  ASSUMED WORKING      P1000100
C*****      ARGUMENTS ARE POWERS (OR SUMS) OF 2                         P1000110
C*****                                                                  P1000120
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENTS.  NO INPUT TAPE.   P1000130
C*****                                                                  P0072070
C*****  WHEN EXECUTING ONLY SEGMENT 100, THE FOLLOWING STATEMENT        P0072075
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072080
C=    NUVI = 6                                                          P0072085
      NUVI = 6                                                          P100B1
C*****                                                                  P0072090
      WRITE(NUVI, 1000)                                                 P1000140
1000  FORMAT(15H1 ACTG2 - (100)//33H  BASIC EXTERNAL FUNCTION -ATAN2-   P1000150
     1//37H  (ARCTANGENT, 2 ARGUMENT -TYPE REAL)                        P1000160
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P1000170
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P1000180
      AVS = .125                                                        P1000190
      CVS = -.25                                                        P1000200
      IVI = 2                                                           P1000210
      BVS = ATAN2(ABS(AMIN1(AVS,CVS)),FLOAT(IVI))                       P1000220
      WRITE (NUVI, 1001) BVS                                            P1000230
      BVS = ATAN2(CVS ** 2, AVS * 2.0)                                  P1000240
      WRITE (NUVI, 1002) BVS                                            P1000250
      BVS = ATAN2 (AVS - CVS, -(4.0 * CVS))                             P1000260
      WRITE (NUVI, 1003) BVS                                            P1000270
      BVS = ATAN2(-CVS/AVS, AMAX0(IVI,4))                               P1000280
      WRITE (NUVI, 1004) BVS                                            P1000290
      BVS = ATAN2(-.09375,AVS)                                          P1000300
      WRITE (NUVI, 1005) BVS                                            P1000310
      BVS = ATAN2(FLOAT(IVI), 2.0)                                      P1000320
      WRITE (NUVI, 1006) BVS                                            P1000330
      WRITE (NUVI, 1007)                                                P1000340
1001  FORMAT(10H0 X= 0.125,5X,15H 0.124354994547,/10X,F15.7)            P1000350
1002  FORMAT(10H0 X= 0.250,5X,15H 0.244978663127,/10X,F15.7)            P1000360
1003  FORMAT(10H0 X= 0.375,5X,15H 0.358770670271,/10X,F15.7)            P1000370
1004  FORMAT(10H0 X= 0.500,5X,15H 0.463647609001,/10X,F15.7)            P1000380
1005  FORMAT(10H0 X=-0.750,5X,15H-0.643501108793,/10X,F15.7)            P1000390
1006  FORMAT(10H0 X= 1.000,5X,15H 0.785398163397,/10X,F15.7)            P1000400
1007  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP1000410
     1 PRINTED TO ,8H7 DIGITS )                                         P1000420
C*****    END OF TEST SEGMENT 100                                       P1000430
C*****  WHEN EXECUTING ONLY SEGMENT 100, THE STOP AND END CARDS         P1000440
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P1000450
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1000460
C=    STOP                                                              P1000470
C=    END                                                               P1000480
      STOP                                                              P100C1
      END                                                               P100C2
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C***********************************************************************P1010010
C*****                                                                  P1010020
C*****                  DATN2 - (101)                                   P1010030
C*****                                                                  P1010040
C***********************************************************************P1010050
C*****  GENERAL PURPOSE                                          ASA REFP1010060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DATAN2 -            8.3.3  P1010070
C*****     (TRIGONOMETRIC ARCTANGENT, TWO ARGUMENT -TYPE D.P.)   TABLE 4P1010080
C*****     USED IN SIMPLE ARITHMETIC EXPRESSIONS                        P1010090
C*****     INTRINSIC FUNCTIONS DMIN1,DMAX1,DSIGN,DBLE,FLOAT             P1010100
C*****    ASSUMED WORKING                                               P1010110
C*****     ARGUMENTS ARE POWERS (OR SUMS) OF 2                          P1010120
C*****                                                                  P1010130
C*****  S P E C I F I C A T I O N S  SEGMENT 101                        P1010140
C*****                                                                  P0012330
C*****  WHEN EXECUTING ONLY SEGMENT 101, THE SPECIFICATION STATEMENTS   P0012335
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=  IN COLUMNS      P0012340
C*****  1  AND  2  REMOVED.                                             P0012345
C*****                                                                  P0012350
C=    DOUBLE PRECISION AVD, BVD, CVD                                    P0012355
      DOUBLE PRECISION AVD, BVD, CVD                                    P101A1
C*****                                                                  P0012360
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE     P1010150
C*****                                                                  P0072100
C*****  WHEN EXECUTING ONLY SEGMENT 101, THE FOLLOWING STATEMENT        P0072105
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072110
C=    NUVI = 6                                                          P0072115
      NUVI = 6                                                          P101B1
C*****                                                                  P0072120
      WRITE (NUVI, 1010)                                                P1010160
1010  FORMAT(15H1 DATN2 - (101)//36H  BASIC EXTERNAL FUNCTION -DATAN2-  P1010170
     1//37H  (ARCTANGENT, 2 ARGUMENT -TYPE D.P.)                        P1010180
     2//27H  ASA REF.- 8.3.3 (TABLE 4)//24H  LINE 1 OF EACH PAIR IS/23H P1010190
     3 HOLLERITH INFORMATION//9H  RESULTS)                              P1010200
      AVD = .125                                                        P1010210
      CVD = -.25                                                        P1010220
      IVI = 2                                                           P1010230
      BVD = DATAN2( DMIN1( AVD,-CVD), 2.0D0/ DBLE(FLOAT(IVI)))          P1010240
      WRITE (NUVI, 1011) BVD                                            P1010250
      BVD = DATAN2( AVD, FLOAT( IVI) * (-CVD))                          P1010260
      WRITE (NUVI, 1012) BVD                                            P1010270
      BVD = DATAN2 (DSIGN(2.0D0 * CVD + AVD, AVD), DMAX1(AVD,CVD,1.0D0))P1010280
      WRITE (NUVI, 1013) BVD                                            P1010290
      BVD = DATAN2(DMIN1(AVD,.0625D0),DMAX1(AVD,CVD))                   P1010300
      WRITE (NUVI, 1014) BVD                                            P1010310
      BVD = DATAN2(DABS(CVD) * DSIGN(AVD, CVD) * 6.D0, .25D0)          P1010320
      WRITE (NUVI, 1015) BVD                                            P1010330
      BVD = DATAN2 (DBLE(FLOAT(IVI)),AVD * FLOAT(IVI **4))              P1010340
      WRITE (NUVI, 1016) BVD                                            P1010350
      WRITE (NUVI, 1017)                                                P1010360
1011  FORMAT(10H0 X= 0.125,5X,19H 0.124354994547D+00 /10X,D24.12)       P1010370
1012  FORMAT(10H0 X= 0.250,5X,19H 0.244978663127D+00 /10X,D24.12)       P1010380
1013  FORMAT(10H0 X= 0.375,5X,19H 0.358770670271D+00 /10X,D24.12)       P1010390
1014  FORMAT(10H0 X= 0.500,5X,19H 0.463647609001D+00 /10X,D24.12)       P1010400
1015  FORMAT(10H0 X=-0.750,5X,19H-0.643501108793D+00 /10X,D24.12)       P1010410
1016  FORMAT(10H0 X= 1.000,5X,19H 0.785398163397D+00 /10X,D24.12)       P1010420
1017  FORMAT(//37H  LINE 2 OF EACH PAIR IS THE FUNCTION/25H  CALCULATIONP1010430
     1 PRINTED TO ,9H12 DIGITS )                                        P1010440
C*****    END OF TEST SEGMENT 101                                       P1010450
C*****  WHEN EXECUTING ONLY SEGMENT 101  THE STOP AND END CARDS         P1010460
C*****  WHICH APPEAR AS COMMENT CARDS  MUST HAVE THE C=                 P1010470
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1010480
C=    STOP                                                              P1010490
C=    END                                                               P1010500
      STOP                                                              P101C1
      END                                                               P101C2
C***********************************************************************P1020010
C*****                                                                  P1020020
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C*****                       DMODA - (102)                              P1020030
C*****                                                                  P1020040
C***********************************************************************P1020050
C*****  GENERAL PURPOSE                                          ASA REFP1020060
C*****     TO TEST BASIC EXTERNAL FUNCTION - DMOD -              8.3.3  P1020070
C*****     (REMAINDERING -TYPE DOUBLE PRECISION)                 TABLE 4P1020080
C*****     INTRINSIC FUNCTIONS DBLE,FLOAT,IDINT, ASSUMED WORKING        P1020090
C*****                                                                  P1020100
C*****  S P E C I F I C A T I O N S  SEGMENT 102                        P1020110
C*****                                                                  P0012370
C*****  WHEN EXECUTING ONLY SEGMENT 102, THE SPECIFICATION STATEMENTS   P0012375
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0012380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012385
C*****                                                                  P0012390
C=    DOUBLE PRECISION AVD,BVD,CVD,DVD,EVD,FVD,GVD                      P0012395
      DOUBLE PRECISION AVD,BVD,CVD,DVD,EVD,FVD,GVD                      P102A1
C*****                                                                  P0012400
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1020120
C*****                                                                  P0072130
C*****  WHEN EXECUTING ONLY SEGMENT 102 THE FOLLOWING STATEMENT         P0072135
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS  1  AND  2  REMOVED.      P0072140
C=    NUVI = 6                                                          P0072145
      NUVI = 6                                                          P102B1
C*****                                                                  P0072150
      WRITE (NUVI, 1020)                                                P1020130
1020  FORMAT(15H1 DMODA - (102)//32H  BASIC EXTERNAL FUNCTION -DMOD-    P1020140
     1//39H  (REMAINDERING -TYPE DOUBLE PRECISION)//27H  ASA REF.- 8.3.3P1020150
     2 (TABLE 4)// 9H  RESULTS)                                         P1020160
      AVD = 16.0625D0                                                   P1020170
      BVD = -4.0D0                                                      P1020180
      CVD = -8.125D0                                                    P1020190
      DVD = 2.5D0                                                       P1020200
      EVD = -1.0D0                                                      P1020210
      FVD =  1.0D0                                                      P1020220
      FVD = DMOD(AVD, BVD)                                              P1020230
      GVD = FVD - 0.0625D0                                              P1020240
      WRITE (NUVI, 1021) GVD                                            P1020250
      FVD = 2.0D0                                                       P1020260
      FVD = DMOD(CVD, DVD)                                              P1020270
      GVD = FVD + 0.625D0                                               P1020280
      WRITE (NUVI, 1021) GVD                                            P1020290
      FVD = 3.0D0                                                       P1020300
      FVD = DMOD(BVD, EVD)                                              P1020310
      GVD = FVD + 0.0D0                                                 P1020320
      WRITE (NUVI, 1021) GVD                                            P1020330
      FVD = 4.0D0                                                       P1020340
      FVD = DMOD(BVD, AVD)                                              P1020350
      GVD = FVD - (BVD-(DBLE(FLOAT(IDINT(BVD/AVD)))) * AVD)             P1020360
      WRITE (NUVI, 1021) GVD                                            P1020370
      WRITE (NUVI, 1022)                                                P1020380
1021  FORMAT(//D25.14)                                                  P1020390
1022  FORMAT(//18H  END OF DMOD TEST//40H  ALL ABOVE ANSWERS SHOULD BE 0P1020400
     1 FOR THIS/32H  TEST SEGMENT TO BE SUCCESSFUL.)                    P1020410
C*****    END OF TEST SEGMENT 102                                       P1020420
C*****  WHEN EXECUTING ONLY SEGMENT 102  THE STOP AND END CARDS         P1020430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1020440
C*****  IN COLUMNS  1  AND 2  REMOVED.                                  P1020450
C=    STOP                                                              P1020460
C=    END                                                               P1020470
      STOP                                                              P102C1
      END                                                               P102C2
C***********************************************************************P1030010
C*****                                                                  P1030020
C*****                       CABSA - (103)                              P1030030
C*****                                                                  P1030040
C***********************************************************************P1030050
C*****  GENERAL PURPOSE                                          ASA REFP1030060
C*****     TO TEST BASIC EXTERNAL FUNCTION  -CABS-               8.3.3  P1030070
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C*****     (MODULUS OF A COMPLEX NUMBER)                         TABLE 4P1030080
C*****     ARGUMENTS ARE ARRAY EP1C(30), FUNCTIONS FROM                 P1030090
C*****      ODD NUMBERED ARGUMENTS PRINTED AS SET 1 AND 2               P1030100
C*****      FROM EVEN NUMBERED ARGUMENTS                                P1030110
C*****      SET 1 RESULTS SHOULD BE .1 E-6 TO .1 E+8                    P1030120
C*****      SET 2 RESULTS SHOULD BE .5 E-6 TO .5 E+8                    P1030130
C*****                                                                  P1030140
C*****  S P E C I F I C A T I O N S  SEGMENT 103                        P1030150
C*****                                                                  P0012410
C*****  WHEN EXECUTING ONLY SEGMENT 103  THE SPECIFICATION STATEMENTS   P0012415
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0012420
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012425
C*****                                                                  P0012430
C=    COMPLEX EP1C(30)                                                  P0012435
      COMPLEX EP1C(30)                                                  P103A1
C*****                                                                  P0012440
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1030160
C*****                                                                  P0072160
C*****  WHEN EXECUTING ONLY SEGMENT 103 THE FOLLOWING STATEMENT         P0072165
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS  1 AND 2 REMOVED.         P0072170
C=    NUVI = 6                                                          P0072175
      NUVI = 6                                                          P103B1
C*****                                                                  P0072180
      WRITE (NUVI, 1030)                                                P1030170
1030  FORMAT(15H1 CABSA - (103)//32H  BASIC EXTERNAL FUNCTION -CABS-    P1030180
     1//31H  (MODULUS OF A COMPLEX NUMBER)//27H  ASA REF.- 8.3.3 (TABLE P1030190
     24)//9H  RESULTS//10X,5HSET 1,15X,5HSET 2 )                        P1030200
C*****INITIALIZE EP1C(EXACT VALUES)                                     P1030210
      EP1C(1) = (0.5E-7,-0.866025E-7)                                   P1030220
      EP1C(2) = (2.5E-7,-4.330125E-7)                                   P1030230
      EP1C(3) = (1.E-6,0.0)                                             P1030240
      EP1C(4) = (5.E-6,0.0)                                             P1030250
      EP1C(5) = (0.5E-5,0.866025E-5)                                    P1030260
      EP1C(6) = (2.5E-5,4.330125E-5)                                    P1030270
      EP1C(7) = (-0.5E-4,0.866025E-4)                                   P1030280
      EP1C(8) = (-2.5E-4,4.330125E-4)                                   P1030290
      EP1C(9) = (-1.E-3,0.0)                                            P1030300
      EP1C(10) = (-5.E-3,0.0)                                           P1030310
      EP1C(11) = (-0.5E-2,-0.866025E-2)                                 P1030320
      EP1C(12) = (-2.5E-2,-4.330125E-2)                                 P1030330
      EP1C(13) = (0.5E-1,-0.866025E-1)                                  P1030340
      EP1C(14) = (2.5E-1,-4.330125E-1)                                  P1030350
      EP1C(15) = (1.0,0.0)                                              P1030360
      EP1C(16) = (5.0,0.0)                                              P1030370
      EP1C(17) = (0.5E1,0.866025E1)                                     P1030380
      EP1C(18) = (2.5E1,4.330125E1)                                     P1030390
      EP1C(19) = (-0.5E2,0.866025E2)                                    P1030400
      EP1C(20) = (-2.5E2,4.330125E2)                                    P1030410
      EP1C(21) = (-1.E3,0.0)                                            P1030420
      EP1C(22) = (-5.E3,0.0)                                            P1030430
      EP1C(23) = (-0.5E4,-0.866025E4)                                   P1030440
      EP1C(24) = (-2.5E4,-4.330125E4)                                   P1030450
      EP1C(25) = (0.5E5,-0.866025E5)                                    P1030460
      EP1C(26) = (2.5E5,-4.330125E5)                                    P1030470
      EP1C(27) = (1.E6,0.0)                                             P1030480
      EP1C(28) = (5.E6,0.0)                                             P1030490
      EP1C(29) = (0.5E7,0.866025E7)                                     P1030500
      EP1C(30) = (2.5E7,4.330125E7)                                     P1030510
      IVI = - 1                                                         P1030520
1031  IVI = IVI + 2                                                     P1030530
      AVS = CABS (EP1C(IVI))                                            P1030540
      BVS = CABS (EP1C(IVI + 1))                                        P1030550
      WRITE (NUVI, 1032) AVS, BVS                                       P1030560
1032  FORMAT(1H0, E17.6, 2X, E17.6)                                     P1030570
      IF (IVI - 29) 1031, 1033, 1033                                    P1030580
1033  WRITE (NUVI, 1034)                                                P1030590
1034  FORMAT(//39H  VALUES IN EACH SET SHOULD BE POSITIVE /39H  .1 FOR SP1030600
     1ET 1 (.5 FOR SET 2), EXPONENT /35H  RANGE FROM -06 TO +08 IN SEQUEP1030610
     2NCE )                                                             P1030620
C*****    END OF TEST SEGMENT 103                                       P1030630
C*****  WHEN EXECUTING ONLY SEGMENT 103  THE STOP AND END CARDS         P1030640
C*****  WHICH APPEAR AS COMMENT CARDS  MUST HAVE THE C=                 P1030650
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1030660
C=    STOP                                                              P1030670
C=    END                                                               P1030680
      STOP                                                              P103C1
      END                                                               P103C2
C***********************************************************************P1100010
C*****                                                                  P1100020
C*****                       BSFTS - (110)                              P1100030
C*****                                                                  P1100040
C***********************************************************************P1100050
C*****  GENERAL PURPOSE                                         ASA REF P1100060
C*****    TEST OF ALL STATEMENT FUNCTIONS THAT HAVE BEEN DEFINED        P1100070
C*****    IN TEST SEGMENT 005                                      8.1.2P1100080
C*****  GENERAL COMMENTS                                                P1100090
C*****    INTRINSIC AND EXTERNAL FUNCTIONS ASSUMED WORKING              P1100100
C*****  INTRINSIC AND BASIC EXTERNAL FUNCTIONS DECLARED IN A     10.1.7 P1100110
C*****  TYPE STATEMENT OF SAME TYPE AS TABLES 3 AND 4               5.3 P1100120
C*****                                                                  P1100130
C*****  S P E C I F I C A T I O N S  SEGMENT 110                        P1100140
C*****                                                                  P0012450
C*****  WHEN EXECUTING ONLY SEGMENT 110, THE SPECIFICATION STATEMENTS   P0012455
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0012460
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012465
C*****                                                                  P0012470
C=    INTEGER IFIX                                                      P0012475
C=    REAL  ABS, SQRT                                                   P0012480
      INTEGER IFIX                                                      P110A1
      REAL  ABS, SQRT                                                   P110A2
C*****                                                                  P0012485
C*****  WHEN EXECUTING ONLY SEGMENT 110, THE SEGMENT 005, WHICH         P1100150
C*****  CONTAINS THE STATEMENT FUNCTIONS BEING TESTED HERE MUST BE      P1100160
C*****  INSERTED AFTER THE SPECIFICATION STATEMENTS OF SEGMENT 110.     P1100170
C***********************************************************************P0050010
C*****                                                                  P0050020
C*****                       BSFDF - (005)                              P0050030
C*****                                                                  P0050040
C***********************************************************************P0050050
C*****  GENERAL PURPOSE                                         ASA REF P0050060
C*****    DEFINING STATEMENT FUNCTIONS THAT ARE TO BE TESTED            P0050070
C*****    IN SEGMENT 110 (BASIC FORTRAN) AND 111 (FULL FORTRAN)    8.1.1P0050080
C*****    HEADER FOR SEGMENT 005                                        P0050090
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS AND VARIABLES          P0050100
      CMAFS(CAWVS,CBWVS) = CAWVS * 2. + CBWVS                           P0050110
      CMBFS(MAWVI,MBWVI,MCWVI) =(MAWVI + MBWVI + MCWVI)/3               P0050120
      MCAFI(MAWVI,MBWVI) = MAWVI ** MBWVI                               P0050130
      MCBFI(CAWVS,CBWVS,CCWVS) = (CAWVS + CBWVS + CCWVS) * 2.0          P0050140
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS, VARIABLES AND         P0050150
C*****    INTRINSIC FUNCTIONS                                           P0050160
      CMCFS(CAWVS,CBWVS,CCWVS) = ABS(CAWVS**2 - (CBWVS+CCWVS)**2)       P0050170
      CMDFS(MAWVI,MBWVI) = ISIGN((MAWVI+MBWVI),(MAWVI-MBWVI))           P0050180
      MCCFI(MAWVI,MBWVI,CAWVS) = MAWVI**2 + MBWVI**2 + IFIX(CAWVS)**2   P0050190
      MCDFI(CAWVS,CBWVS,CCWVS,CDWVS,CEWVS) = (CAWVS + CBWVS + CCWVS +   P0050200
     1CDWVS +CEWVS) ** (ABS(CAWVS))                                     P0050210
C*****    DEFINING EXPRESSION CONTAINS PREVIOUSLY DEFINED STATEMENT     P0050220
C*****    FUNCTIONS AND/OR EXTERNAL FUNCTION REFERENCES                 P0050230
      CMEFS(CAWVS,CBWVS) = CMBFS(1,2,3) + SQRT((CAWVS + CBWVS))         P0050240
      CMFFS(MAWVI,MBWVI,MCWVI) = MCCFI(MAWVI,MBWVI,3.0) + MCWVI **2     P0050250
      MCEFI(MAWVI,MBWVI) = MCAFI(MAWVI,MBWVI) ** MCAFI(MAWVI,MBWVI)     P0050260
      MCFFI(CAWVS,CBWVS,CCWVS) = SQRT(CAWVS) + SQRT(CBWVS) + EXP(CCWVS) P0050270
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS, VARIABLES, INTRINSIC  P0050280
C*****    OR EXTERNAL FUNCTION REFERENCES AND PREVIOUSLY DEFINED        P0050290
C*****    STATEMENT FUNCTIONS.                                          P0050300
      CMGFS(MAWVI,MBWVI,CAWVS,CBWVS) = FLOAT(MAWVI ** 2) - CMAFS(CAWVS, P0050310
     1CBWVS) + SQRT((FLOAT(MAWVI + MBWVI)))                             P0050320
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      MCGFI(MAWVI,MBWVI,MCWVI,CAWVS) = MCEFI(MAWVI,MBWVI) - MCEFI(MAWVI,P0050330
     1MCWVI) + IFIX(EXP(CAWVS))                                         P0050340
C*****    END OF TEST SEGMENT 005                                       P0050350
C*****                                                                  P1100180
C***** O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1100190
C*****                                                                  P0072190
C***** WHEN EXECUTING ONLY SEGMENT 110, THE FOLLOWING STATEMENT         P0072195
C***** NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.           P0072200
C=    NUVI = 6                                                          P0072205
      NUVI = 6                                                          P110B1
C*****                                                                  P0072210
      WRITE (NUVI,1100)                                                 P1100200
1100  FORMAT(39H1 BSFTS - (110) STATEMENT FUNCTION TEST/23X,16HINTEGER AP1100210
     1NO REAL//18H  ASA REF. - 8.1.2// 9H  RESULTS)                     P1100220
C*****    HEADER FOR SEGMENT 110 WRITTEN                                P1100230
      CMAVS = 9.0 - CMAFS(2.0, 3.0 + 2.0)                               P1100240
      CMBVS = CMBFS(2/2, 1+1, 1*3) -2.0                                 P1100250
      MCAVI = MCAFI(IFIX(5.0),5) - (5 ** 5)                             P1100260
      MCBVI = MCBFI(1.0,2.0,3.0) - MCAFI(6,2) + 24                      P1100270
      WRITE (NUVI,1108) CMAVS, CMBVS, MCAVI, MCBVI                      P1100280
      CMAVS = CMCFS(4.0,2.0,2.0)                                        P1100290
      CMBVS = CMOFS(-1,-4) - 5.0                                        P1100300
      MCAVI = MCCFI(9*2/18, (4**2)/8, 3.0) - 14                         P1100310
      MCBVI = MCOFI(1.,2.1,3.,4.,5.) -15                                P1100320
      WRITE (NUVI,1108) CMAVS, CMBVS, MCAVI, MCBVI                      P1100330
      CMAVS = CMEFS(2.0,1.0 * 2.0) - 4.0                                P1100340
      MCAVI = 3                                                         P1100350
      CMBVS = CMFFS(1,2, MCAVI) - 23.                                   P1100360
      MCAVI = MCEFI(2,2) - (4 ** 4)                                     P1100370
      MCBVI = MCFFI(9.0,4.0,CMBVS * CMBVS * 0.0) - 6                    P1100380
      WRITE (NUVI,1108) CMAVS, CMBVS, MCAVI, MCBVI                      P1100390
      CMAVS = CMGFS(3,13,2.0,5.0) - 4.0                                 P1100400
      CMBVS = CMGFS(IFIX(SQRT(CMAFS(2.,5.))),IFIX(CMFFS(1,2,3) -10.),   P1100410
     1 CMBFS(1,2,3), CMOFS(-1,-4)) - 4.0                                P1100420
      MCAVI = MCGFI(2,2,2,0.0) - 1                                      P1100430
      MCBVI = MCGFI(MCAFI(2,1), MCBFI(1.0,0.,.0), IFIX(SQRT(CMGFS(3,13, P1100440
     12.0,5.0))),EXP(0.0) - 1.0)-1                                      P1100450
      WRITE (NUVI,1108) CMAVS, CMBVS, MCAVI, MCBVI                      P1100460
      WRITE (NUVI,1109)                                                 P1100470
1108  FORMAT ( /2(F20.10 /),2(I19/ ))                                   P1100480
1109  FORMAT ( /36H  ALL ABOVE ANSWERS SHOULD BE 0 FOR /                P1100490
     137H  THIS TEST SEGMENT TO BE SUCCESSFUL.)                         P1100500
C*****    END OF TEST SEGMENT 110                                       P1100510
C***** WHEN EXECUTING ONLY SEGMENT 110, THE  STOP  ANO  ENO  CARDS      P1100520
C***** WHICH APPEAR AS COMMENT CAROS MUST HAVE THE  C=                  P1100530
C***** IN COLUMNS  1  AND  2  REMOVED.                                  P1100540
C=    STOP                                                              P1100550
C=    END                                                               P1100560
      STOP                                                              P110C1
      END                                                               P110C2
C***********************************************************************P1110010
C*****                                                                  P1110020
C*****                           FSFTS - (111)                          P1110030
C*****                                                                  P1110040
C***********************************************************************P1110050
C***** GENERAL PURPOSE                                          ASA REF P1110060
C*****    TEST STATEMENT FUNCTIONS THAT HAVE BEEN OEFINEO IN      8.1.2P1110070
C*****    SEGMENT 006 (FOR FULL FORTRAN TEST ONLY)                      P1110080
C***** GENERAL COMMENTS                                                 P1110090
C*****    INTRINSIC AND EXTERNAL FUNCTIONS ASSUMEO WORKING              P1110100
C***** INTRINSIC AND BASIC EXTERNAL FUNCTIONS DECLARED IN A     10.1.7 P1110110
C***** TYPE STATEMENT OF SAME TYPE AS TABLES 3 AND 4               5.3 P1110120
C*****                                                                  P1110130
C***** S P E C I F I C A T I O N S  SEGMENT 111                         P1110140
C*****                                                                  P0012490
C***** WHEN EXECUTING ONLY SEGMENT 111, THE SPECIFICATION STATEMENTS    P0012495
C***** WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                   P0012500
C***** IN COLUMNS  1  AND  2  REMOVED.                                  P0012505
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C*****                                                                  P0012510
C=    DOUBLE PRECISION DPAFD,DPBFD,DPCFD,DPDFD,DPFFD,DPGFD,DPEFD,DPHFD  P0012515
C=    DOUBLE PRECISION DPAVD, DPBVD, DPCVD, DPDVD ,DAWVD,DBWVD,DCWVD    P0012520
C=    DOUBLE PRECISION DPA1D(5),FC2D(5,5)                               P0012525
C=    DOUBLE PRECISION DBLE, DEXP                                       P0012530
C=    COMPLEX CMPLX, CEXP                                               P0012535
C=    COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC                       P0012540
C=    COMPLEX CHAFC, CHBFC, CHCFC, CHDFC,CAWVC, CBWVC                   P0012545
C=    LOGICAL A3B(2,2,2)                                                P0012550
C=    LOGICAL MCFVB, MCHVB, ABFB, BCFB, IEFB, KLFB                      P0012555
C=   -  ,MCEVB,MCIVB,MCKVB,ATVB, AWVB,BWVB,CWVB,DWVB,EWVB,SWVB,TWVB     P0012560
      DOUBLE PRECISION DPAVD, DPBVD, DPCVD, DPDVD ,DAWVD,DBWVD,DCWVD    P111A1
      DOUBLE PRECISION DPAFD, DPBFD,DPCFD,DPDFD,DPFFD,DPGFD,DPEFD,DPHFD P111A2
      DOUBLE PRECISION DPA1D(5), FC2D(5,5)                              P111A3
      COMPLEX CHAVC,CHBVC,CHCVC,CHDVC,CHEVC,CHFVC                       P111A4
      COMPLEX CHAFC, CHBFC, CHCFC, CHDFC,CAWVC, CBWVC                   P111A5
      LOGICAL A3B(2,2,2)                                                P111A6
      LOGICAL MCFVB, MCHVB, ABFB, BCFB, IEFB, KLFB                      P111A7
     -  ,MCEVB,MCIVB,MCKVB,ATVB, AWVB,BWVB,CWVB,DWVB,EWVB,SWVB,TWVB     P111A8
      COMPLEX CMPLX, CEXP                                               P111A9
      DOUBLE PRECISION DBLE, DEXP                                       P111AA
C*****                                                                  P0012565
C*****  WHEN EXECUTING ONLY SEGMENT 111, THE SEGMENT 006, WHICH         P1110150
C*****  CONTAINS THE STATEMENT FUNCTIONS BEING TESTED HERE MUST BE      P1110160
C*****  INSERTED AFTER THE SPECIFICATION STATEMENTS OF SEGMENT 111.     P1110170
C***********************************************************************P0060010
C*****                                                                  P0060020
C*****                       FSFDF - (006)                              P0060030
C*****                                                                  P0060040
C***********************************************************************P0060050
C*****  GENERAL PURPOSE                                         ASA REF P0060060
C*****    DEFINING STATEMENT FUNCTIONS THAT ARE TO BE TESTED       8.1.1P0060070
C*****    IN SEGMENT 111 (FULL FORTRAN STATEMENT FUNCTION TEST)         P0060080
C*****    HEADER FOR SEGMENT 006                                        P0060090
C*****    D.P. STATEMENT FUNCTIONS CONTAINING CONSTANTS AND VARIABLES   P0060100
      DPAFD(DAWVD,DBWVD) = (DAWVD + DBWVD) ** 2                         P0060110
      DPBFD(DAWVD,DBWVD,DCWVD) = (DAWVD + DBWVD - DCWVD) ** 3           P0060120
      DPCFD(DAWVD,DBWVD,DCWVD) = 3.0D0 *  (DAWVD + DBWVD + DCWVD)/2.D0  P0060130
C*****    D.P. STATEMENT FUNCTIONS CONTAINING CONSTANTS, VARIABLES      P0060140
C*****    AND INTRINSIC FUNCTION REFERENCES                             P0060150
      DPDFD(DAWVD,DBWVD) = DSIGN(DAWVD, -(DBWVD))                       P0060160
      DPEFD(DAWVD,DBWVD,CAWVC,CAWVS) = DBLE(CAWVS + AIMAG(CAWVC))       P0060170
     1+ DMAX1(DAWVD,DBWVD + 1.D0)                                       P0060180
C*****    D.P. STATEMENT FUNCTIONS CONTAINING CONSTANTS, VARIABLES,     P0060190
C*****    INTRINSIC FUNCTION AND PREVIOUSLY DEFINED STATEMENT FUNCTION  P0060200
C*****    REFERENCES                                                    P0060210
      DPFFD(DAWVD,DBWVD,CAWVS) = DPAFD(DAWVD,DBWVD) -(2.D0 * DAWVD *    P0060220
     1 DBWVD) + (DBLE(CAWVS) * 2.D0 )                                   P0060230
      DPGFD(DAWVD,DBWVD,CAWVS,CAWVC) = DPBFD(DAWVD,DBWVD,DBLE(CAWVS))   P0060240
     1 - DBLE(AIMAG(CAWVC)) + 5.0D0                                     P0060250
C*****    D.P. STATEMENT FUNCTIONS CONTAINING CONSTANTS, VARIABLES,     P0060260
C*****    INTRINSIC FUNCTION, PREVIOUSLY DEFINED STATEMENT FUNCTION     P0060270
C*****    AND EXTERNAL FUNCTION REFERENCES                              P0060280
      DPHFD(DAWVD,DBWVD,CAWVS) = DPFFD(DAWVD,DBWVD +1.0D0, CAWVS) * 2.D0P0060290
     1 + DEXP(DAWVD) - (DBLE(CAWVS) * 2 .D0)-DEXP(DAWVD)                P0060300
C*****    COMPLEX STATEMENT FUNCTIONS CONTAINING CONSTANTS AND VARIABLESP0060310
      CHAFC(CAWVC,CBWVC) = CAWVC * (2.0,2.0) + CBWVC + (2.0,2.0)        P0060320
C*****    COMPLEX STATEMENT FUNCTION CONTAINING CONSTANTS, VARIABLES,   P0060330
C*****    AND INTRINSIC FUNCTION REFERENCES                             P0060340
      CHBFC(CAWVC,CBWVC,CAWVS) = CAWVC - CBWVC + CMPLX(CAWVS,CAWVS)     P0060350
C*****    COMPLEX STATEMENT FUNCTION CONTAINING CONSTANTS,              P0060360
C*****    VARIABLES, INTRINSIC AND EXTERNAL FUNCTION REFERENCES         P0060370
      CHCFC(CAWVC,CBWVC,CAWVS,CBWVS) = (CAWVC - CBWVC) + CEXP (CMPLX    P0060380
     1 (CAWVS,CBWVS)) -  CMPLX(CAWVS,CBWVS)                             P0060390
C*****    COMPLEX STATEMENT FUNCTION CONTAINING CONSTANTS, VARIABLES,   P0060400
C*****    INTRINSIC, EXTERNAL AND PREVIOUSLY DEFINED STATEMENT FUNCTION P0060410
C*****    REFERENCES                                                    P0060420
      CHDFC(CAWVC,CBWVC,CAWVS,CBWVS) = CHCFC(CAWVC,CBWVC,CAWVS +CAWVS,  P0060430
     1 2.0 * CBWVS)  + CMPLX(1.0,2.0)                                   P0060440
C*****   STATEMENT FUNCTION CONTAINING LOGICAL VARIABLES                P0060450
      ABFB(AWVB, BWVB, DWVB) = AWVB .AND. BWVB .OR. .FALSE..AND.DWVB    P0060460
C*****   STATEMENT FUNCTION CONTAINING CONSTANTS, VARIABLES AND         P0060470
C*****  INTRINSIC FUNCTIONS                                             P0060480
      BCFB(EWVB,CWVB,BAWVS,BCWVS) = EWVB .AND.(BAWVS * ABS(BCWVS) .GT.  P0060490
     1  0.5).AND..NOT. CWVB                                             P0060500
C*****  STATEMENT FUNCTION CONTAINING PREVIOUSLY DEFINED STATEMENT      P0060510
C*****    FUNCTION AND AN INTRINSIC FUNCTION REFERENCE                  P0060520
      IEFB(EWVB,ATVB,CWVB,BAWVS,BCWVS) = ATVB .AND.EWVB .AND. CWVB .OR. P0060530
     1 AMAX1(BAWVS,BCWVS) .GT. 600. .OR.  BCFB (EWVB,CWVB,BAWVS,BCWVS)  P0060540
C*****  STATEMENT FUNCTION CONTAINING BASIC EXTERNAL FUNCTION REFERENCE P0060550
      KLFB(SWVB,TWVB,ATVB,BAWVS) = SWVB .AND..NOT. TWVB.OR.(SQRT(BAWVS) P0060560
     1  .GT. 9.0) .OR. ATVB                                             P0060570
C*****    END OF TEST SEGMENT 006                                       P0060580
C*****                                                                  P1110180
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1110190
C*****                                                                  P0072220
C*****  WHEN EXECUTING ONLY SEGMENT 111, THE FOLLOWING STATEMENT        P0072225
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0072230
C=    NUVI = 6                                                          P0072235
      NUVI = 6                                                          P111B1
C*****                                                                  P0072240
      WRITE (NUVI,1110)                                                 P1110200
1110  FORMAT(39H1 FSFTS - (111) STATEMENT FUNCTION TEST//               P1110210
     1 39H  DOUBLE PRECISION, COMPLEX AND LOGICAL//                     P1110220
     218H  ASA REF. - 8.1.2//10H  RESULTS )                             P1110230
C*****    HEADER FOR SEGMENT 111 WRITTEN                                P1110240
C*****    CONSTANTS USED IN THIS SEGMENT                                P1110250
      CHAVC = (1.0,2.0)                                                 P1110260
      CHBVC = (-2.0,3.0)                                                P1110270
      DPA1D(2) = 3.5D0                                                  P1110280
      ATVB = .FALSE.                                                    P1110290
      PPDVS = 18.                                                       P1110300
      RRDVS = 21.0                                                      P1110310
      ATVS = 18.0                                                       P1110320
      MCFVB = .TRUE.                                                    P1110330
      FC2D(2,2) = 1.75D0                                                P1110340
C*****    TEST OF D.P. STATEMENT FUNCTIONS                              P1110350
      DPAVD = DPAFD(3.5D0,DPA1D(2)) - 49.0D0                            P1110360
      DPBVD = DPBFD(1.D0,DPA1D(2)- 2.5D0,DBLE(1.0)) - 1.0D0             P1110370
      DPCVD = DPCFD(0.D0,1.0D0,DPA1D(2)+ 0.5D0) - 7.5D0                 P1110380
      DPDVD = DPDFD(DBLE(AIMAG(CHAVC)),FC2D(2,2)) + 2.0D0               P1110390
      WRITE (NUVI,1118) DPAVD, DPBVD, DPCVD, DPDVD                      P1110400
      DPAVD = DPEFD(1.0D0, FC2D(2,2) *2.D0,(1.0,-4.),AMAX1(2.0,4.0))    P1110410
     1  - 4.5D0                                                         P1110420
      DPBVD = DPFFD(DPA1D(2), FC2D(2,2)-1.75D0,5.00) - 22.25D0          P1110430
      DPCVD = DPGFD(2.D0/.2D1,DPA1D(2) - 2.5D0,1.0,CHAVC) - 4.0D0       P1110440
      DPDVD= DPHFD(3.5D0, FC2D(2,2) - 2.75D0,5.0) - 34.5D0              P1110450
      WRITE (NUVI,1118) DPAVD, DPBVD, DPCVD, DPDVD                      P1110460
C*****    TEST OF COMPLEX STATEMENT FUNCTIONS                           P1110470
      CHCVC = CHAFC((2.0,2.),CHAVC) - (3.0,12.0)                        P1110480
      CHDVC = CHBFC((4.0,-8.5),CHBVC,1.0) - (7.0,-10.5)                 P1110490
      CHEVC = CHCFC((1.0,1.0) **2,CHAVC, 0.000, AIMAG(CHAVC) -2.0)      P1110500
      CHFVC = CHDFC((0.0,0.0)     ,CHAVC, 0.000 , SNGL (DMIN1(0.D0,4.D0))P1110510
     1)-(1.0,0.0)                                                       P1110520
      WRITE (NUVI,1117) CHCVC, CHDVC, CHEVC, CHFVC                      P1110530
      WRITE (NUVI, 1119)                                                P1110540
C*****  TEST OF LOGICAL STATEMENT FUNCTION                              P1110550
      MCEVB = PPDVS .GT. 60.0                                           P1110560
      A3B(1,1,1) = ATVS .LE. 20.9 .AND. ABFB(.TRUE.,.TRUE.,.FALSE.)     P1110570
      MCHVB  = BCFB(.TRUE.,.FALSE.,PPDVS,21.0) .AND..NOT.PPDVS.GE.RRDVS P1110580
      MCIVB = .NOT. (IEFB(.FALSE.,ATVB,.TRUE.,650.,-5.11).AND.ATVB)     P1110590
      MCKVB = MCFVB.AND.KLFB(.TRUE.,.TRUE.,.TRUE.,100.).AND..NOT.MCEVB  P1110600
      WRITE (NUVI,1116) A3B(1,1,1), MCHVB, MCIVB, MCKVB                 P1110610
1116  FORMAT(//4(L4)//38H THE FOUR ABOVE ANSWERS SHOULD BE TRUE/        P1110620
     1 35H  FOR THIS SEGMENT TO BE SUCCESSFUL)                          P1110630
1117  FORMAT(/ 4(F16.7,F14.7/))                                         P1110640
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1118  FORMAT (/ 4(D30.18/))                                             P1110650
1119  FORMAT (/ 40H  ALL ABOVE ANSWERS SHOULD BE 0 FOR THIS/            P1110660
     140H  TEST SEGMENT TO BE SUCCESSFUL. VALUES /40H  WITH EXPONENTS LEP1110670
     2SS THAN    10**(-14) /22H  ARE CONSIDERED ZERO )                  P1110680
C*****    END OF TEST SEGMENT 111                                       P1110690
C*****  WHEN EXECUTING ONLY SEGMENT 111, THE  STOP  AND  END  CARDS     P1110700
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                  P1110710
C*****  IN COLUMNS  1  AND  2  REMOVED.                                  P1110720
C=    STOP                                                              P1110730
C=    END                                                               P1110740
      STOP                                                              P111C1
      END                                                               P111C2
C***********************************************************************P1400010
C*****                                                                  P1400020
C*****                           CPXAD - (140)                          P1400030
C*****                                                                  P1400040
C***********************************************************************P1400050
C*****                       GENERAL PURPOSE                            P1400060
C*****    TO TEST ADDITION AND SUBTRACTION OF COMPLEX NUMBERS   ASA REFP1400070
C*****    INCLUDES OPERATIONS WITH UP TO 9 TERMS                  6.1   P1400080
C*****    DOES NOT TEST FOR ACCURACY                                    P1400090
C*****                                                                  P1400100
C*****ADDITION AND SUBTRACTION OF 2 TERMS                               P1400110
C*****                                                                  P1400120
C*****  S P E C I F I C A T I O N S  SEGMENT 140                        P1400130
C*****                                                                  P0012570
C*****  WHEN EXECUTING ONLY SEGMENT 140, THE SPECIFICATION STATEMENTS   P0012575
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                   P0012580
C*****  IN COLUMNS  1  AND  2  REMOVED.                                  P0012585
C*****                                                                  P0012590
C=    COMPLEX  AVC, BVC, CVC, DVC, EVC, FVC, GVC, HVC, IVC, JVC, AAVC,  P0012595
C=   1 ABVC,BAVC,BBVC,CCVC,CDVC,BCVC,DCVC                               P0012600
      COMPLEX  AVC, BVC, CVC, DVC, EVC, FVC, GVC, HVC, IVC, JVC, AAVC,  P140A1
     1 ABVC,BAVC,BBVC,CCVC,CDVC,BCVC,DCVC                               P140A2
C*****                                                                  P0012605
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1400140
C*****  WHEN EXECUTING ONLY SEGMENT 140, THE FOLLOWING STATEMENT        P0072250
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072255
C*****                                                                  P0072260
C=    NUVI = 6                                                          P0072265
      NUVI = 6                                                          P140B1
      WRITE (NUVI, 1401)                                                P1400150
1401  FORMAT(1H1,1X,34HCPXAD - (140) COMPLEX ADDITION AND/16X,          P1400160
     111HSUBTRACTION//2X,14HASA REF. - 6.1//2X,7HRESULTS//)             P1400170
      AVC=(1.467,2.560)                                                 P1400180
      BVC=(3.568,7.480)                                                 P1400190
      CVC=AVC+BVC                                                       P1400200
      DVC=AVC+(3.568,7.480)                                             P1400210
      EVC=(1.9467,2.9560)+BVC                                           P1400220
      FVC=(1.467,2.560)+(3.568,7.480)                                   P1400230
      GVC=AVC-BVC                                                       P1400240
      HVC = (.1467E+1,.2560E1) - BVC                                    P1400250
      IVC = AVC - (3568E-3,.7480E+1)                                    P1400260
      JVC=(1.467,2.560)-(3.568,7.480)                                   P1400270
C*****ADDITION AND SUBTRACTION OF 3 TERMS                               P1400280
      AAVC=AVC+BVC-CVC                                                  P1400290
      ABVC=AVC+(3.568,7.480)-DVC                                        P1400300
      BAVC=(1.467,2.560)+BVC-CVC                                        P1400310
      BBVC=(1.467,2.560)+(3.568,7.480)-FVC                              P1400320
      BCVC=AVC-BVC-GVC                                                  P1400330
      CCVC=(1.467,2.560)-BVC-HVC                                        P1400340
      CDVC=AVC-(3.568,7.480)-IVC                                        P1400350
      DCVC=(1.467,2.560)-(3.568,7.480)-JVC                              P1400360
      WRITE(NUVI,1402) AAVC,ABVC,BAVC,BBVC,BCVC,CCVC,CDVC,DCVC          P1400370
C*****ADDITION AND SUBTRACTION OF 5 TERMS                               P1400380
      AAVC=AVC-(1.89,6.48)-AAVC-BVC+(0.0,9.830)                         P1400390
      ABVC=AVC-(1.89,6.48)-AAVC-BVC+(0.0,9.830)                         P1400400
      WRITE(NUVI,1402)ABVC                                              P1400410
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```
 1402 FORMAT(2X,2F8.4)                                                  P1400420
      AAVC=AVC-(1.89,6.48)-BVC+(0.0,9.83)+CVC                           P1400430
C*****AOOITION ANO SUBTRACTION OF 6 TERMS                               P1400440
      ABVC=AVC-(1.89,6.48)-BVC+(0.0,9.83)+CVC-AAVC                      P1400450
      WRITE(NUVI,1402) ABVC                                             P1400460
C*****AOOITION ANO SUBTRACTION OF 8 TERMS                               P1400470
      AAVC=AVC+BVC-CVC+(0.34,6.45)-(4.54,6.85)+OVC+(1.0,0.0)-EVC        P1400480
C*****ADOITION ANO SUBTRACTION OF 9 TERMS                               P1400490
      ABVC=AVC+BVC-CVC+(0.34,6.45)-(4.54,6.85)+OVC+(1.0,0.0)-EVC-AAVC   P1400500
      WRITE (NUVI,1403) ABVC                                            P1400510
 1403 FORMAT(2X,2F8.4//2X,35HTEST IS POSITIVE IF NUMBERS PRINTEO/2X     P1400520
     117HABOVE ARE 0.0,0.0)                                             P1400530
C*****    ENO OF TEST SEGMENT 140                                       P1400540
C*****  WHEN EXECUTING ONLY SEGMENT 140, THE  STOP  ANO  ENO  CAROS     P1400550
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C=                  P1400560
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P1400570
C=    STOP                                                              P1400580
C=    END                                                               P1400590
      STOP                                                              P140C1
      END                                                               P140C2
C***********************************************************************P1410010
C*****                                                                  P1410020
C*****                   CPXMU - (141)                                  P1410030
C***********************************************************************P1410040
C*****                  GENERAL PURPOSE                                 P1410050
C*****    TO TEST MULTIPLICATION OF COMPLEX NUMBERS              ASA REFP1410060
C*****    INCLUDES OPERATIONS WITH UP TO 10 TERMS                6.1    P1410070
C*****    DOES NOT TEST FOR ACCURACY                                    P1410080
C*****                                                                  P1410090
C*****                                                                  P1410100
C*****  S P E C I F I C A T I O N S   SEGMENT 141                       P1410110
C*****                                                                  P0012610
C*****  WHEN EXECUTING ONLY SEGMENT 141, THE SPECIFICATION STATEMENTS   P0012615
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012620
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012625
C*****                                                                  P0012630
C=    COMPLEX AVC, BVC, CVC, OVC, EVC, FVC, GVC, HVC, IVC, JVC          P0012635
C=   1   ,AAVC, ABVC, BAVC, BBVC                                        P0012640
      COMPLEX AVC, BVC, CVC, OVC, EVC, FVC, GVC, HVC, IVC, JVC          P141A1
     1   ,AAVC, ABVC, BAVC, BBVC                                        P141A2
C*****                                                                  P0012645
C*****  O U T O U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1410120
C*****                                                                  P0072270
C*****  WHEN EXECUTING ONLY SEGMENT 141, THE FOLLOWING STATEMENT        P0072275
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  ANO  2  REMOVEO.     P0072280
C*****                                                                  P0072285
C=    NUVI = 6                                                          P0072290
      NUVI = 6                                                          P141B1
C*****                                                                  P0072295
      WRITE (NUVI, 1411)                                                P1410130
1411  FORMAT (1H1,1 X,36HCPXMU - (141) COMPLEX MULTIPLICATION//2X,      P1410140
     114HASA REF. - 6.1//2X,7HRESULTS//)                                P1410150
C*****MULTIPLICATION OF TWO TERMS                                       P1410160
      AVC = (-0.5,0.86602)                                              P1410170
      BVC = (-0.5,-0.86602)                                             P1410180
      AAVC = (AVC * BVC )                                               P1410190
      ABVC =  AVC * (-0.5,-0.86602)                                     P1410200
      BAVC = (-0.5,0.86602) * BVC                                       P1410210
      BBVC = (-0.5,0.86602)*(-0.5,-0.86602)                             P1410220
      WRITE(NUVI,1412) AAVC,ABVC,BAVC,BBVC                              P1410230
C*****MULTIPLICATION OF 3 TERMS                                         P1410240
      AVC=(0.0,1.0)                                                     P1410250
      BVC=(1.0,0.0)                                                     P1410260
      CVC=(0.0,-1.0)                                                    P1410270
      AAVC=AVC*BVC*CVC                                                  P1410280
      ABVC=(0.0,1.0)*BVC*(0.0,-1.0)                                     P1410290
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410300
 1412  FORMAT(2X,2F8.3)                                                 P1410310
```

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C*****MULTIPLICATION OF 4 TERMS                                         P1410320
      AVC=(0.30901,0.95105)                                             P1410330
      BVC=(-0.80901,0.58778)                                            P1410340
      CVC=(-0.80901,-0.58778)                                           P1410350
      DVC=(0.30901,-0.95105)                                            P1410360
      AAVC=AVC*BVC*CVC*DVC                                              P1410370
      ABVC=AVC*(-0.80901,0.58778)*CVC*(0.30901,-0.95105)                P1410380
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410390
C*****MULTIPLICATION OF 5 TERMS                                         P1410400
      AVC=(0.5,0.86602)                                                 P1410410
      BVC=(-0.5,0.86602)                                                P1410420
      CVC = (1.0,0.0)                                                   P1410430
      DVC=(-0.5,-0.86602)                                               P1410440
      EVC=(0.5,-0.86602)                                                P1410450
      AAVC=AVC*BVC*CVC*DVC*EVC                                          P1410460
      ABVC=AVC*(-0.5,0.86602)*CVC*(-0.5,-0.86602)*EVC                   P1410470
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410480
C*****MULTIPLICATION OF 6 TERMS                                         P1410490
      AVC = (0.98480,0.17364)                                           P1410500
      BVC=(-0.17364,0.98480)                                            P1410510
      CVC=(-0.86602,0.5)                                                P1410520
      DVC=(-0.93969,-0.34202)                                           P1410530
      EVC=(0.34202,-0.93969)                                            P1410540
      FVC=(0.86602,-0.5)                                                P1410550
      AAVC=AVC*BVC*CVC*DVC*EVC*FVC                                      P1410560
      ABVC=AVC*(-0.17364,0.98480)*CVC*(-0.93969,-0.34202)*EVC*(0.86602, P1410570
     1-0.5)                                                             P1410580
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410590
C*****MULTIPLICATION OF 7 TERMS                                         P1410600
      AVC=(0.70710,0.70710)                                             P1410610
      BVC=(0.0,1.0)                                                     P1410620
      CVC=(-0.70710,0.70710)                                            P1410630
      DVC=(1.0,0.0)                                                     P1410640
      EVC=(-0.70710,-0.70710)                                           P1410650
      FVC=(0.0,-1.0)                                                    P1410660
      GVC=(0.70710,-0.70710)                                            P1410670
      AAVC=AVC*BVC*CVC*DVC*EVC*FVC*GVC                                  P1410680
      ABVC=AVC*(0.0,1.0)*CVC*( 1.0,0.0)*EVC*(0.0,-1.0)*GVC              P1410690
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410700
C*****MULTIPLICATION OF 8 TERMS                                         P1410710
      AVC=(0.76604,0.64278)                                             P1410720
      BVC=(0.17364,0.98480)                                             P1410730
      CVC=(-0.5,0.86602)                                                P1410740
      DVC=(-0.93969,0.34202)                                            P1410750
      EVC=(-0.93969,-0.34202)                                           P1410760
      FVC=(-0.5,-0.86602)                                               P1410770
      GVC=(0.17364,-0.98480)                                            P1410780
      HVC=(0.76604,-0.64278)                                            P1410790
      AAVC=AVC*BVC*CVC*DVC*EVC*FVC*GVC*HVC                              P1410800
      ABVC=AVC*(0.17364,0.98480)*CVC*DVC*(-0.93969,-0.34202)*FVC*GVC*HVCP1410810
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410820
C*****MULTIPLICATION OF 9 TERMS                                         P1410830
      AVC=(0.80901,0.58778)                                             P1410840
      BVC=(0.30901,0.95105)                                             P1410850
      CVC=(-0.94832,0.31730)                                            P1410860
      DVC=(-0.80901,0.58778)                                            P1410870
      EVC = (1.0,0.0)                                                   P1410880
      FVC=(-0.80901,-0.58778)                                           P1410890
      GVC=(-0.94832,-0.31730)                                           P1410900
      HVC=(0.30901,-0.95105)                                            P1410910
      IVC=(0.80901,-0.58778)                                            P1410920
      AAVC=AVC*BVC*CVC*DVC*EVC*FVC*GVC*HVC*IVC                          P1410930
      ABVC=AVC*(0.30901,0.95105)*CVC*(-0.80901,0.58778)*( 1.0,0.0)*FVC* P1410940
     1GVC*HVC*IVC                                                       P1410950
      WRITE(NUVI,1412) AAVC,ABVC                                        P1410960
C*****MULTIPLICATION OF 10 TERMS                                        P1410970
      AVC=(0.86602,0.5)                                                 P1410980
      BVC=(0.5,0.86602)                                                 P1410990
      CVC=(0.0,1.0)                                                     P1411000
      DVC=(-0.5,0.86602)                                                P1411010
      EVC=(-0.86602,0.5)                                                P1411020
      FVC=(-1.0,0.0)                                                    P1411030
      GVC=(-0.86602,-0.5)                                               P1411040
      HVC=(-0.5,-0.86602)                                               P1411050
      IVC=(0.0,-1.0)                                                    P1411060
      JVC=(0.0,1.0)                                                     P1411070
      AAVC=AVC*BVC*CVC*DVC*EVC*FVC*GVC*HVC*IVC*JVC                      P1411080
      ABVC=AVC*(0.5,0.86602)*CVC*(-0.5,0.86602)*EVC*FVC*GVC*HVC*(0.0,-1.P1411090
     10)*JVC                                                            P1411100
      WRITE(NUVI,1412) AAVC,ABVC                                        P1411110
      WRITE(NUVI,1413)                                                  P1411120
1413  FORMAT (1H0,35HTEST IS POSITIVE IF NUMBERS PRINTED/1X,            P1411130
     117HABOVE ARE 1.0,0.0)                                             P1411140
      WRITE(NUVI, 1414)                                                 P1411150
1414  FORMAT (//39H  ERROR SHOULD NOT EXCEED + OR - .001  )             P1411160
C*****    END OF TEST SEGMENT 141                                       P1411170
C*****  WHEN EXECUTING ONLY SEGMENT 141, THE STOP AND END CARDS        P1411180
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                P1411190
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1411200
C=    STOP                                                              P1411210
C=    END                                                               P1411220
      STOP                                                              P141C1
      END                                                               P141C2
C***********************************************************************P1420010
C*****                                                                  P1420020
C*****                         CPXDV-(142)                              P1420030
C*****                                                                  P1420040
C***********************************************************************P1420050
C*****                GENERAL PURPOSE                                   P1420060
C*****      TO TEST DIVISION OF COMPLEX NUMBERS                  ASA REFP1420070
C*****                                                            6.1   P1420080
C*****                                                                  P1420090
C*****  S P E C I F I C A T I O N S   SEGMENT 142                       P1420100
C*****                                                                  P0012650
C*****  WHEN EXECUTING ONLY SEGMENT 142, THE SPECIFICATION STATEMENTS   P0012655
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012660
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012665
C*****                                                                  P0012670
C=    COMPLEX NUMVC,DENVC,QAVC,QBVC,QCVC,QDVC                           P0012675
      COMPLEX NUMVC,DENVC,QAVC,QBVC,QCVC,QDVC                           P142A1
C*****                                                                  P0012680
C*****  O U T O U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1420110
C*****                                                                  P0072300
C*****  WHEN EXECUTING ONLY SEGMENT 142, THE FOLLOWING STATEMENT        P0072305
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072310
C*****                                                                  P0072315
C=    NUVI = 6                                                          P0072320
      NUVI = 6                                                          P142B1
C*****                                                                  P0072325
      WRITE (NUVI, 1421)                                                P1420120
1421  FORMAT(1H1,1X,25HCPXDV - (142) DIVISION OF/16X,                   P1420130
     115HCOMPLEX NUMBERS//15H  ASA REF.- 6.1//2X,7HRESULTS//)           P1420140
C***** TEST NUMBER 1                                                    P1420150
      NUMVC=(0.36602,1.36602)                                           P1420160
      DENVC=(0.86602,0.5)                                               P1420170
      QAVC=NUMVC/DENVC                                                  P1420180
      QBVC=(0.36602,1.3660) /DENVC                                      P1420190
      QCVC=NUMVC/(0.86602,0.5)                                          P1420200
      QDVC=(0.36602,1.36602)/(0.86602,0.5)                              P1420210
      WRITE(NUVI,1422)  QAVC,QBVC,QCVC,QDVC                             P1420220
C*****TEST NUMBER 2                                                     P1420230
      NUMVC=(0.0,1.41420)                                               P1420240
      DENVC=(0.70710,0.70710)                                           P1420250
      QAVC=NUMVC/DENVC                                                  P1420260
      QBVC=(0.0,1.41420)/DENVC                                          P1420270
      QCVC=NUMVC/(0.70710,0.70710)                                      P1420280
      QDVC=(0.0,1.41420)/(0.70710,0.70710)                              P1420290
      WRITE(NUVI,1422) QAVC,QBVC,QCVC,QDVC                              P1420300
 1422 FORMAT(2X,2F8.4)                                                  P1420310
C*****TEST NUMBER 3                                                     P1420320
      NUMVC=(-0.36602,1.36602)                                          P1420330
      DENVC=(0.5,0.86602)                                               P1420340
      QAVC=NUMVC/DENVC                                                  P1420350
      QBVC=(-0.36602,1.36602)/DENVC                                     P1420360
      QCVC=NUMVC/(0.5,0.86602)                                          P1420370
      QDVC=(-0.36602,1.36602)/(0.5,0.86602)                             P1420380
      WRITE(NUVI,1422) QAVC,QBVC,QCVC,QDVC                              P1420390
C*****TEST NUMBER 4                                                     P1420400
      NUMVC=(0.73204,2.73204)                                           P1420410
      DENVC=(1.73204,1.0)                                               P1420420
      QAVC=NUMVC/DENVC                                                  P1420430
      QBVC=(0.73204,2.73204)/DENVC                                      P1420440
      QCVC=NUMVC/(1.73204,1.0)                                          P1420450
      QDVC=(0.73204,2.73204)/(1.73204,1.0)                              P1420460
      WRITE(NUVI,1422) QAVC,QBVC,QCVC,QDVC                              P1420470
C***** TEST NUMBER 5                                                    P1420480
      NUMVC=(0.0,2.82840)                                               P1420490
      DENVC=(1.41420,1.41420)                                           P1420500
      QAVC=NUMVC/DENVC                                                  P1420510
      QBVC=(0.0,2.82840)/DENVC                                          P1420520
      QCVC=NUMVC/(1.41420,1.41420)                                      P1420530
      QDVC=(0.0,2.82840)/(1.41420,1.41420)                              P1420540
      WRITE(NUVI,1422) QAVC,QBVC,QCVC,QDVC                              P1420550
      WRITE(NUVI,1423)                                                  P1420560
1423  FORMAT (//2X,35HTEST IS POSITIVE IF NUMBERS PRINTED/2X,           P1420570
     117HABOVE ARE 1.0,1.0)                                             P1420580
      WRITE (NUVI, 1424)                                                P1420590
1424  FORMAT (//39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1420600
C*****    END OF TEST SEGMENT 142                                       P1420610
C*****  WHEN EXECUTING ONLY SEGMENT 142, THE STOP AND END CARDS         P1420620
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1420630
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1420640
C=    STOP                                                              P1420650
C=    END                                                               P1420660
      STOP                                                              P142C1
      END                                                               P142C2
C***********************************************************************P1430010
C*****                                                                  P1430020
C*****                   CPXEX(143)                                     P1430030
C*****                                                                  P1430040
C***********************************************************************P1430050
C*****                 GENERAL PURPOSE                                  P1430060
C*****    TO TEST EXPONENTIATION OF COMPLEX NUMBERS            ASA REFP1430070
C*****    BY INTEGERS                                               6.1 P1430080
C*****    EXPONENT VALUES VARY FROM 3 TO 100                            P1430090
C*****                                                                  P1430100
C*****  S P E C I F I C A T I O N S   SEGMENT 143                       P1430110
C*****                                                                  P0012690
C*****  WHEN EXECUTING ONLY SEGMENT 143, THE SPECIFICATION STATEMENTS   P0012695
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012700
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012705
C=    INTEGER AVI                                                       P0012710
C=    COMPLEX AVC,BVC,CVC,DVC,EVC                                       P0012715
      COMPLEX AVC,BVC,CVC,DVC,EVC                                       P143A1
      INTEGER AVI                                                       P143A2
C*****  O U T O U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1430120
C*****                                                                  P0072330
C*****  WHEN EXECUTING ONLY SEGMENT 143, THE FOLLOWING STATEMENT        P0072335
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072340
C*****                                                                  P0072345
C=    NUVI = 6                                                          P0072350
      NUVI = 6                                                          P143B1
C*****                                                                  P0072355
      WRITE (NUVI, 1431)                                                P1430130
 1431 FORMAT(1H1,1 X,36HCPXEX - (143) COMPLEX EXPONENTIATION//          P1430140
     1 2X,11HASA.REF.6.1//2X,29HRESULTS BASED ON THE FUNCTION//         P1430150
     2 2X,25H1.0 = SIN**2(X)+COS**2(X)//)                               P1430160
C***** EXPONENT=3                                                       P1430170
      AVC   = (-0.5,0.8660254)                                          P1430180
      AVI=3                                                             P1430190
      BVC=AVC**3                                                        P1430200
      CVC   = (-0.5,0.8660254) ** 3                                     P1430210
      DVC   = (-0.5,0.8660254) ** AVI                                   P1430220
      EVC=AVC**AVI                                                      P1430230
      WRITE(NUVI,1432) BVC,CVC,DVC,EVC                                  P1430240
C***** EXPONENT=4                                                       P1430250
      AVC=(0.0,1.0)                                                     P1430260
      AVI=4                                                             P1430270
      BVC=AVC**4                                                        P1430280
      CVC=(0.0,1.0)**4                                                  P1430290
      DVC=(0.0,1.0)**AVI                                                P1430300
      EVC=AVC**AVI                                                      P1430310
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430320
 1432 FORMAT (2X,2F8.4)                                                 P1430330
C***** EXPONENT=6                                                       P1430340
      AVC   = ( 0.5,0.8660254)                                          P1430350
      AVI=6                                                             P1430360
      BVC=AVC**6                                                        P1430370
      CVC   = ( 0.5,0.8660254) ** 6                                     P1430380
      DVC   = ( 0.5,0.8660254) ** AVI                                   P1430390
      EVC= AVC**AVI                                                     P1430400
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430410
C***** EXPONENT=8                                                       P1430420
      AVC   = (0.7071068,0.7071068)                                     P1430430
      AVI=8                                                             P1430440
      BVC=AVC**8                                                        P1430450
      CVC   = (0.7071068,0.7071068) ** 8                                P1430460
      DVC   = (0.7071068,0.7071068) ** AVI                              P1430470
      EVC=AVC**AVI                                                      P1430480
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430490
C***** EXPONENT=10                                                      P1430500
      AVC   = (0.8090170,0.5877853)                                     P1430510
      AVI=10                                                            P1430520
      BVC=AVC**10                                                       P1430530
      CVC   = (0.8090170,0.5877853) ** 10                               P1430540
      DVC   = (0.8090170,0.5877853) ** AVI                              P1430550
      EVC=AVC**AVI                                                      P1430560
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430570
C*****EXPONENT=20                                                       P1430580
      AVC   = (0.9510565,0.3090170)                                     P1430590
      AVI=20                                                            P1430600
      BVC=AVC**20                                                       P1430610
      CVC   = (0.9510565,0.3090170) ** 20                               P1430620
      DVC   = (0.9510565,0.3090170) ** AVI                              P1430630
      EVC=AVC**AVI                                                      P1430640
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430650
C***** EXPONENT=40                                                      P1430660
      AVC   = (0.9876883,0.1564345)                                     P1430670
      AVI=40                                                            P1430680
      BVC=AVC**40                                                       P1430690
      CVC   = (0.9876883,0.1564345) ** 40                               P1430700
      DVC   = (0.9876883,0.1564345) ** AVI                              P1430710
      EVC=AVC**AVI                                                      P1430720
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430730
C***** EXPONENT=60                                                      P1430740
      AVC   = (0.9945219,0.1045285)                                     P1430750
      AVI=60                                                            P1430760
      BVC=AVC**60                                                       P1430770
      CVC   = (0.9945219,0.1045285) ** 60                               P1430780
      DVC   = (0.9945219,0.1045285) ** AVI                              P1430790
      EVC=AVC**AVI                                                      P1430800
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430810
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C*****EXPONENT=80                                                       P1430820
      AVI = 80                                                          P1430830
      AVC   = (0.9969173,0.0784591)                                     P1430840
      BVC=AVC**80                                                       P1430850
      CVC   = (0.9969173,0.0784591) ** 80                               P1430860
      DVC   = (0.9969173,0.0784591) ** AVI                              P1430870
      EVC=AVC**AVI                                                      P1430880
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430890
C***** EXPONENT=100                                                     P1430900
      AVC   = (0.9980267,0.0627905)                                     P1430910
      AVI=100                                                           P1430920
      BVC=AVC**100                                                      P1430930
      CVC   = (0.9980267,0.0627905) ** 100                              P1430940
      DVC   = (0.9980267,0.0627905) ** AVI                              P1430950
      EVC=AVC**AVI                                                      P1430960
      WRITE(NUVI,1432)  BVC,CVC,DVC,EVC                                 P1430970
      WRITE (NUVI,1433)                                                 P1430980
 1433 FORMAT (//  37H  TEST IS POSITIVE IF NUMBERS PRINTED/2X,          P1430990
     1  26HABOVE ARE CLOSE TO 1.0,0.0)                                  P1431000
      WRITE (NUVI, 1434)                                                P1431010
1434  FORMAT(// 39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1431020
C*****    END OF TEST SEGMENT 143                                       P1431030
C*****  WHEN EXECUTING ONLY SEGMENT 143, THE STOP AND END CARDS         P1431040
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1431050
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1431060
C=    STOP                                                              P1431070
C=    END                                                               P1431080
      STOP                                                              P143C1
      END                                                               P143C2
C***********************************************************************P1440010
C*****                                                                  P1440020
C*****                       CPXOP - (144)                              P1440030
C*****                                                                  P1440040
C***********************************************************************P1440050
C*****             GENERAL PURPOSE                              ASA REF P1440060
C*****  TO TEST ARITHMETIC OPERATIONS ON COMPLEX NUMBERS.       6.1     P1440070
C*****  OPERATIONS INCLUDE ALL BASIC OPERATORS (+,-,*,**) ACTING        P1440080
C*****  ON COMPLEX NUMBERS                                              P1440090
C*****                                                                  P1440100
C*****  S P E C I F I C A T I O N S   SEGMENT 144                       P1440110
C*****                                                                  P0012730
C*****  WHEN EXECUTING ONLY SEGMENT 144, THE SPECIFICATION STATEMENTS   P0012735
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012740
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012745
C*****                                                                  P0012750
C=    INTEGER AVI                                                       P0012755
C=    COMPLEX  AVC, BVC, CVC, DVC, EVC, FVC, GVC,HVC,PVC,RVC,SVC,TVC,UVCP0012760
      INTEGER AVI                                                       P144A1
      COMPLEX  AVC, BVC, CVC, DVC, EVC, FVC, GVC,HVC,PVC,RVC,SVC,TVC,UVCP144A2
C*****                                                                  P0012765
C*****  O U T O U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1440120
C*****                                                                  P0072360
C*****  WHEN EXECUTING ONLY SEGMENT 144, THE FOLLOWING STATEMENT        P0072365
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072370
C*****                                                                  P0072375
C=    NUVI = 6                                                          P0072380
      NUVI = 6                                                          P144B1
C*****                                                                  P0072385
      WRITE (NUVI, 1441)                                                P1440130
 1441  FORMAT(1H1,1X,32HCPXOP - (144) COMPLEX OPERATIONS//2X,           P1440140
     111HASA REF 6.1//2X,7HRESULTS//)                                   P1440150
      AVC = (0.9396926,0.3420201)                                       P1440160
      BVC = (1.2817127,0.5976725)                                       P1440170
      CVC = (0.0, 1.4142136)                                            P1440180
      DVC = (0.7071068, 0.7071068)                                      P1440190
      EVC = (1.0986841, 0.4550899)                                      P1440200
      AVI = 2                                                           P1440210
      RVC=(AVC*BVC+(0.9396926,0.3420201)*BVC+AVC*(1.2817127,0.5976725)- P1440220
     1(0.9396926,0.3420201)*(1.2817127,0.5976725)+CVC/DVC+(0.0,1.4142136P1440230
     2)/DVC+CVC/(0.7071068,0.7071068)-(0.0,1.4142136)/(0.7071068,       P1440240
     3 0.7071068)+EVC**2-EVC**AVI+(1.0986841,0.4550899)**2+(1.0986841,  P1440250
     4 0.4550899)**AVI)**2/(0.0, 72.0)                                  P1440260
      FVC=(0.0,4.0)                                                     P1440270
      GVC=(0.43301,0.3)                                                 P1440280
      HVC=(0.43301,0.2)                                                 P1440290
      PVC=(1.73204,1.0)                                                 P1440300
      SVC=FVC/((GVC+HVC)*(PVC**2))                                      P1440310
      TVC=(0.0,4.0)/(((0.43301,0.3)+(0.43301,0.2))*((1.73204,1.0)**2))  P1440320
      UVC=FVC/((GVC+(0.43301,0.2))*(PVC**2))                            P1440330
      WRITE (NUVI,1442) RVC,SVC,TVC,UVC                                 P1440340
1442  FORMAT ( 4(2X,2F8.4/) /37H  TEST IS POSITIVE IF NUMBERS PRINTED / P1440350
     12X, 17HABOVE ARE 1.0,0.0 )                                        P1440360
      WRITE (NUVI, 1443)                                                P1440370
1443  FORMAT(// 39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1440380
C*****    END OF TEST SEGMENT 144                                       P1440390
C*****  WHEN EXECUTING ONLY SEGMENT 144, THE STOP AND END CARDS         P1440400
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1440410
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1440420
C=    STOP                                                              P1440430
C=    END                                                               P1440440
      STOP                                                              P144C1
      END                                                               P144C2
C***********************************************************************P1450010
C*****                                                                  P1450020
C*****                       CREAD-(145)                                P1450030
C*****                                                                  P1450040
C***********************************************************************P1450050
C*****  GENERAL PURPOSE                                         ASA REF P1450060
C*****  TO TEST ADDITION AND SUBTRACTION OF COMPLEX               6.1   P1450070
C*****  AND REAL NUMBERS                                                P1450080
C*****                                                                  P1450090
C*****  S P E C I F I C A T I O N S   SEGMENT 145                       P1450100
C*****                                                                  P0012770
C*****  WHEN EXECUTING ONLY SEGMENT 145, THE SPECIFICATION STATEMENTS   P0012775
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012780
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012785
C*****                                                                  P0012790
C=    COMPLEX AVC,BAVC,CAVC,DAVC,ASVC,BSVC,CSVC,AAVC                    P0012795
C=   2 ,        DSVC,AAAVC,ABAVC,ACAVC,ADAVC,AASVC,ABSVC,ACSVC,ADSVC    P0012800
      COMPLEX AVC,BAVC,CAVC,DAVC,ASVC,BSVC,CSVC,AAVC                    P145A1
     2 ,        DSVC,AAAVC,ABAVC,ACAVC,ADAVC,AASVC,ABSVC,ACSVC,ADSVC    P145A2
C*****                                                                  P0012805
C*****  O U T O U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1450110
C*****                                                                  P0072390
C*****  WHEN EXECUTING ONLY SEGMENT 145, THE FOLLOWING STATEMENT        P0072395
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072400
C*****                                                                  P0072405
C=    NUVI = 6                                                          P0072410
      NUVI = 6                                                          P145B1
C*****                                                                  P0072415
      WRITE (NUVI, 1450)                                                P1450120
 1450 FORMAT(1H1,1X,38HCREAD - (145) ADDITION AND SUBTRACTION/          P1450130
     1 10X,27HOF COMPLEX AND REAL NUMBERS//2X,                          P1450140
     1 12HASA REF. 6.1//2X,7HRESULTS//)                                 P1450150
      AVC=(5.4,7.5)                                                     P1450160
      AVS=4.2                                                           P1450170
C***** ADDITION AND SUBTRACTION OF 2 NUMBERS                            P1450180
      AAVC=AVC-AVS                                                      P1450190
      BAVC=(5.4,7.5)-AVS                                                P1450200
      CAVC=AVC-4.2                                                      P1450210
      DAVC=(5.4,7.5)-4.2                                                P1450220
      ASVC=AVC+AVS                                                      P1450230
      BSVC=(5.4,7.5)+AVS                                                P1450240
      CSVC=AVC+4.2                                                      P1450250
      DSVC=(5.4,7.5)+4.2                                                P1450260
C***** ADDITION AND SUBTRACTION OF 3 NUMBERS                            P1450270
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      AAAVC=AVC-AVS-AAVC                                                P1450280
      ABAVC=(5.4,7.5)-AVS-BAVC                                          P1450290
      ACAVC=AVC-4.2-(1.2,7.5)                                           P1450300
      ADAVC=(5.4,7.5)-4.2-(1.2,7.5)                                     P1450310
      AASVC=AVC+AVS-ASVC                                                P1450320
      ABSVC=(5.4,7.5)+AVS-BSVC                                          P1450330
      ACSVC=AVC+4.2-(9.6,7.5)                                           P1450340
      ADSVC=(5.4,7.5)+4.2-(9.6,7.5)                                     P1450350
      WRITE(NUVI,1451)ABAVC,ACAVC,ADAVC,AASVC,ABSVC,ACSVC,ADSVC,AAAVC   P1450360
1451  FORMAT( 2X, 2F8.4)                                                P1450370
C***** ADDITION AND SUBTRACTION OF 7 NUMBERS                            P1450380
      ADSVC=AVC-(5.4,7.5)+AVS-4.2+ASVC-3.2-(6.4,7.5)                    P1450390
      WRITE(NUVI,1452) ADSVC                                            P1450400
 1452 FORMAT(2X,2F8.4//37H  TEST IS POSITIVE IF NUMBERS PRINTED/2X,     P1450410
     1 17HABOVE ARE 0.0,0.0)                                            P1450420
C*****     END OF TEST SEGMENT 145                                      P1450430
C*****   WHEN EXECUTING ONLY SEGMENT 145, THE STOP AND END CARDS        P1450440
C*****   WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                P1450450
C*****   IN COLUMNS  1  AND  2  REMOVED.                                P1450460
C=    STOP                                                              P1450470
C=    END                                                               P1450480
      STOP                                                              P145C1
      END                                                               P145C2
C***********************************************************************P1460010
C*****                                                                  P1460020
C*****                       CREMU - (146)                              P1460030
C*****                                                                  P1460040
C***********************************************************************P1460050
C*****            GENERAL PURPOSE                              ASA REF  P1460060
C*****     TO TEST MULTIPLICATION OF COMPLEX NUMBERS BY            6.1  P1460070
C*****     REAL NUMBERS                                                 P1460080
C*****                                                                  P1460090
C*****   S P E C I F I C A T I O N S   SEGMENT 146                      P1460100
C*****                                                                  P0012810
C*****   WHEN EXECUTING ONLY SEGMENT 146, THE SPECIFICATION STATEMENTS   P0012815
C*****   WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                     P0012820
C*****   IN COLUMNS  1  AND  2  REMOVED.                                P0012825
C*****                                                                  P0012830
C=    COMPLEX AVC,BVC,     MAVC,MBVC,MCVC,MDVC                          P0012835
      COMPLEX AVC,BVC,     MAVC,MBVC,MCVC,MDVC                          P146A1
C*****                                                                  P0012840
C*****   O U T O U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1460110
C*****                                                                  P0072420
C*****   WHEN EXECUTING ONLY SEGMENT 146, THE FOLLOWING STATEMENT       P0072425
C*****   NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.    P0072430
C*****                                                                  P0072435
C=    NUVI = 6                                                          P0072440
      NUVI = 6                                                          P146B1
C*****                                                                  P0072445
      WRITE (NUVI, 1461)                                                P1460120
 1461 FORMAT(1H1,1X,39HCREMU - (146) MULTIPLICATION OF COMPLEX/16X,     P1460130
     1 7HBY REAL   //2X,                                                P1460140
     2 11HASA.REF.6.1//2X,7HRESULTS//)                                  P1460150
C*****MULTIPLICATION OF A COMPLEX NUMBER BY A REAL NUMBER                P1460160
      AVC=(1.6,3.2)                                                     P1460170
      AVS=0.625                                                         P1460180
      MAVC=AVC*AVS                                                      P1460190
      MBVC=(1.6,3.2)*AVS                                                P1460200
      MCVC=AVC*0.625                                                    P1460210
      MDVC=(1.6,3.2)*0.625                                              P1460220
      WRITE (NUVI,1463) MAVC,MBVC,MCVC,MDVC                             P1460230
1463  FORMAT(4(2X,2F8.4/)//37H  TEST IS POSITIVE IF NUMBERS PRINTED/,2X,P1460240
     417HABOVE ARE 1.0,2.0 )                                            P1460250
C*****MULTIPLICATION OF 4 TERMS                                         P1460260
      AVS=4.0                                                           P1460270
      BVS=0.25                                                          P1460280
      AVC=(0.93969,0.34202)                                             P1460290
      BVC=(1.28168,0.59764)                                             P1460300
      MAVC=AVS*AVC*BVS*BVC                                              P1460310
      MBVC=4.0*BVS*AVC*BVC                                              P1460320
      MCVC=4.0*BVS*(0.93969,0.34202)*BVC                                P1460330
      MDVC=4.0*0.25*(0.93969,0.34202)*(1.28168,0.59764)                 P1460340
      WRITE (NUVI,1462) MAVC,MBVC,MCVC,MDVC                             P1460350
 1462 FORMAT(//4(2X,2F8.4/)//37H  TEST IS POSITIVE IF NUMBERS PRINTED/  P1460360
     12X,17HABOVE ARE 1.0,1.0)                                          P1460370
      WRITE (NUVI, 1464)                                                P1460380
1464  FORMAT(// 39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1460390
C*****    END OF TEST SEGMENT 146                                       P1460400
C*****  WHEN EXECUTING ONLY SEGMENT 146, THE STOP AND END CARDS         P1460410
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1460420
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1460430
C=    STOP                                                              P1460440
C=    END                                                               P1460450
      STOP                                                              P146C1
      END                                                               P146C2
C***********************************************************************P1470010
C*****                                                                  P1470020
C*****                       CREDV - (147)                              P1470030
C*****                                                                  P1470040
C***********************************************************************P1470050
C*****             GENERAL PURPOSE                              ASA REF P1470060
C*****  TO TEST DIVISION OF REAL (COMPLEX) NUMBERS BY            6.1    P1470070
C*****  COMPLEX (REAL) NUMBERS                                          P1470080
C*****                                                                  P1470090
C*****  S P E C I F I C A T I O N S   SEGMENT 147                       P1470100
C*****                                                                  P0012850
C*****  WHEN EXECUTING ONLY SEGMENT 147, THE SPECIFICATION STATEMENTS   P0012855
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012860
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012865
C*****                                                                  P0012870
C=    COMPLEX AVC,DAVC,DBVC,DCVC,DDVC                                   P0012875
      COMPLEX AVC,DAVC,DBVC,DCVC,DDVC                                   P147A1
C*****                                                                  P0012880
C*****  O U T O U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1470110
C*****                                                                  P0072450
C*****  WHEN EXECUTING ONLY SEGMENT 147, THE FOLLOWING STATEMENT        P0072455
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072460
C*****                                                                  P0072465
C=    NUVI = 6                                                          P0072470
      NUVI = 6                                                          P147B1
C*****                                                                  P0072475
      WRITE (NUVI, 1471)                                                P1470120
1471  FORMAT (1H1,1X,33HCREDV - (147) DIVISION OF COMPLEX/16X,16HAND REAP1470130
     1L NUMBERS//2X,11HASA REF 6.1//2X,7HRESULTS//)                     P1470140
C*****DIVISION OF REAL BY COMPLEX                                       P1470150
      AVS=2.0                                                           P1470160
      AVC=(1.0, -1.0)                                                   P1470170
      DAVC=AVS/AVC                                                      P1470180
      DBVC=2.0/AVC                                                      P1470190
      DCVC=AVS/(1.0, -1.0)                                              P1470200
      DDVC=2.0/(1.0, -1.0)                                              P1470210
      WRITE (NUVI,1473) DAVC,DBVC,DCVC,DDVC                             P1470220
1473  FORMAT( 2X, 2F8.4)                                                P1470230
C*****DIVISION OF COMPLEX BY REAL                                       P1470240
      AVS=2.5463                                                        P1470250
      AVC=(2.5463,2.5463)                                               P1470260
      DAVC=AVC/AVS                                                      P1470270
      DBVC=(2.5463,2.5463)/AVS                                          P1470280
      DCVC=AVC/2.5463                                                   P1470290
      DDVC=(2.5463,2.5463)/2.5463                                       P1470300
      WRITE (NUVI,1472) DAVC,DBVC,DCVC,DDVC                             P1470310
1472  FORMAT (4(2X,2F8.4/)//37H  TEST IS POSITIVE IF NUMBERS PRINTED/   P1470320
     1 2X,17HABOVE ARE 1.0,1.0)                                         P1470330
      WRITE (NUVI, 1474)                                                P1470340
1474  FORMAT(// 39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1470350
C*****    END OF TEST SEGMENT 147                                       P1470360
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C*****  WHEN EXECUTING ONLY SEGMENT 147, THE STOP AND END CARDS         P1470370
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1470380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1470390
C=    STOP                                                              P1470400
C=    END                                                               P1470410
      STOP                                                              P147C1
      END                                                               P147C2
C***********************************************************************P1480010
C*****                                                                  P1480020
C*****                       CREOP - (148)                              P1480030
C*****                                                                  P1480040
C***********************************************************************P1480050
C*****                GENERAL PURPOSE                           ASA REF P1480060
C*****   TO TEST COMBINED OPERATIONS ON COMPLEX AND REAL NUMBERS    6.1 P1480070
C*****DIVISION OF TWO POLYNOMIALS                                       P1480080
C*****                                                                  P1480090
C*****  S P E C I F I C A T I O N S   SEGMENT 148                       P1480100
C*****                                                                  P0012890
C*****  WHEN EXECUTING ONLY SEGMENT 148, THE SPECIFICATION STATEMENTS   P0012895
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012900
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012905
C*****                                                                  P0012910
C=    INTEGER AVI                                                       P0012915
C=    COMPLEX, AVC, BVC, CVC, DVC, RVC                                  P0012920
      INTEGER AVI                                                       P148A1
      COMPLEX AVC,BVC,CVC,DVC,RVC                                       P148A2
C*****                                                                  P0012925
C*****  O U T O U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1480110
C*****                                                                  P0072480
C*****  WHEN EXECUTING ONLY SEGMENT 148, THE FOLLOWING STATEMENT        P0072485
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072490
C*****                                                                  P0072495
C=    NUVI = 6                                                          P0072500
      NUVI = 6                                                          P148B1
C*****                                                                  P0072505
      WRITE (NUVI, 1481)                                                P1480120
 1481 FORMAT(1H1,1X,36HCREOP - (148) OPERATIONS ON REAL AND/16X,15HCOMPLP1480130
     1EX NUMBERS//  2X,12HASA REF. 6.1//2X, 7HRESULTS//)                P1480140
      AVC=(1.0,1.0)                                                     P1480150
      AVS=1.0                                                           P1480160
      BVS = 2.0                                                         P1480170
      BVC=(1.0,-1.0)                                                    P1480180
      RVC = (BVS + AVC *(1.+AVC * (-1.+(1.0,1.0)*(-1. +AVC))))/         P1480190
     1 (4.0+BVC*(2.0+BVC*(-AVS+BVC*(0.5+BVC))))                         P1480200
      WRITE (NUVI,1483) RVC                                             P1480210
1483  FORMAT(             2X,2F8.4//37H  TEST IS POSITIVE IF NUMBERS PRIP1480220
     3NTED/2X,18HABOVE ARE 2.0,-1.0//)                                  P1480230
C*****COMPLEX ARITHMETIC EXPRESSION                                     P1480240
      AVC=(1.60,3.2)                                                    P1480250
      AVS=0.625                                                         P1480260
      BVS=2.0                                                           P1480270
      BVC=(1.0,-1.0)                                                    P1480280
      CVS=2.5                                                           P1480290
      CVC=(2.5,2.5)                                                     P1480300
      DVC = (1.09866,0.45508)                                           P1480310
      AVI = 2                                                           P1480320
      RVC=(AVC*AVS+(1.6,3.2)*AVS-AVC*0.625-(1.6,3.2)*0.625+BVS/BVC      P1480330
     1-BVS/(1.0,-1.0)+2.0/BVC+2.0/(1.0,-1.0)+CVC/CVS-(2.5,2.5)/CVS+     P1480340
     2CVC/2.5+(2.5,2.5)/2.5+DVC**AVI-(1.09866,0.45508)**2+DVC**2+       P1480350
     3(1.09866,0.45508)**AVI)**2/(0.0,72.0)                             P1480360
      WRITE (NUVI,1482) RVC                                             P1480370
 1482 FORMAT(2X,2F8.4//   37H  TEST IS POSITIVE IF NUMBERS PRINTED/2X,  P1480380
     1 17HABOVE ARE 1.0,0.0)                                            P1480390
      WRITE (NUVI, 1484)                                                P1480400
1484  FORMAT(// 39H  ERROR SHOULD NOT EXCEED + OR - .0001 )             P1480410
C*****    END OF TEST SEGMENT 148                                       P1480420
C*****  WHEN EXECUTING ONLY SEGMENT 148, THE STOP AND END CARDS         P1480430
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1480440
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C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1480450
C=    STOP                                                              P1480460
C=    END                                                               P1480470
      STOP                                                              P148C1
      END                                                               P148C2
C***********************************************************************P1490010
C*****                                                                  P1490020
C*****                       MISC3 - (149)                              P1490030
C*****                                                                  P1490040
C***********************************************************************P1490050
C*****                GENERAL PURPOSE                           ASA REF P1490060
C*****   TO TEST EFFECT OF BLANKS WITHIN STATEMENT,             3.1.4.1 P1490070
C*****   CONTINUATION OF STATEMENT TO MAX.NO.OF LINES,          3.2.4,3.3P1490080
C*****   AND USE OF SPECIAL CHARACTERS TO INDICATE CONTINUATION   3.2.4 P1490090
C*****   LINE -                                                         P1490100
C*****   FOR BASIC INTEGERS AND REAL NUMBERS                            P1490110
C*****                                                                  P1490120
C*****  S P E C I F I C A T I O N S   SEGMENT 149                       P1490130
C*****                                                                  P0012930
C*****  WHEN EXECUTING ONLY SEGMENT 149, THE SPECIFICATION STATEMENTS   P0012935
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012940
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012945
C*****                                                                  P0012950
C=    DIMENSION A1S(5),A2S(2,2)                                         P0012955
C=    INTEGER I1I(5),I2I(2,2)                                           P0012960
      DIMENSION A1S(5),A2S(2,2)                                         P149A1
      INTEGER I1I(5),I2I(2,2)                                           P149A2
C*****                                                                  P0012965
C*****  O U T O U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1490140
C*****                                                                  P0072510
C*****  WHEN EXECUTING ONLY SEGMENT 149, THE FOLLOWING STATEMENT        P0072515
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072520
C*****                                                                  P0072525
C=    NUVI = 6                                                          P0072530
      NUVI = 6                                                          P149B1
C*****                                                                  P0072535
      WRITE (NUVI,1490)                                                 P1490150
1490  FORMAT(1H1,1X,37HMISC3 - (149) EFFECT OF BLANKS WITHIN/16X,       P1490160
     122HSTMNT AND CONTINUATION/16X,20HOF STMNT TO 20 LINES//           P1490170
     239H  ASA REFS. - 3.1.4.1  3.2.4.3.3  3.2.4//2X,7HRESULTS  )       P1490180
      J  A  C   V  I        =              1                            P1490190
      I                                                                 P1490200
     =1                                                                 P1490210
     +I                                                                 P1490220
     -(                                                                 P1490230
     *2                                                                 P1490240
     /)                     =2                                          P1490250
      I     2I(   2  ,  1)   =   3                                      P1490260
      A   CV     S    =    -   1  .0   E    0                           P1490270
      A   1   S   (    2)     =     -2     00  .  E   -  2              P1490280
      A   2   S   (   2    ,   1  )    =   -  .0 3    E  +  2           P1490290
      K   B                                                             P1490300
     *        CVI                                                       P1490310
     (                 =                                                P1490320
     )                  J     A                                         P1490330
     $                   C           V                                  P1490340
     .                            I                                     P1490350
     ,                                 +         I                      P1490360
     /                                             1    I               P1490370
     =                                                     (   2        P1490380
     1                                                          )       P1490390
     2                                                                 +P1490400
     3I                                                                 P1490410
     4            2                                                     P1490420
     5                  I                                               P1490430
     6                       (                                          P1490440
     7                                 2                                P1490450
     8                                                                  P1490460
     9                                     1                            P1490470
     A                                     )                            P1490480
     B                                                 -         6      P1490490
      C             M                                                   P1490500
     =           A                                                      P1490510
     ,                  V       S                                       P1490520
     (                         =                                        P1490530
     $                             A                                    P1490540
     *                                      C                           P1490550
     .                                                 V                P1490560
     )                                                                 SP1490570
     /+                                                                 P1490580
     1    A            1                                                P1490590
     2                   S                                              P1490600
     3                                                                 (P1490610
     42)                                                               +P1490620
     5            A                                                     P1490630
     6                  2                                               P1490640
     7                            S          (                          P1490650
     8                     2                                   1        P1490660
     9)                                                                 P1490670
     A                +                                                 P1490680
     B                           6       .                 0            P1490690
      W     RI  T  E     (NU  VI  , 1 49 1 ) KB CVI  , CMA  VS          P1490700
1 491 F O RM A T (//I10//F11.1// 2 X, 35HTEST IS POSITIVE IF NUMBERS PRIP1490710
     1NTED/  2    X,    1  1HABOVE ARE 0)                               P1490720
C*****    END OF TEST SEGMENT 149                                       P1490730
C*****  WHEN EXECUTING ONLY SEGMENT 149, THE STOP AND END CARDS         P1490740
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1490750
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1490760
C=    STOP                                                              P1490770
C=    END                                                               P1490780
      STOP                                                              P149C1
      END                                                               P149C2
C***********************************************************************P1500010
C*****                                                                  P1500020
C*****                       MISC4 - (150)                              P1500030
C*****                                                                  P1500040
C***********************************************************************P1500050
C*****                GENERAL PURPOSE                           ASA REF P1500060
C*****   TO TEST EFFECT OF BLANKS WITHIN STATEMENT,             3.1.4.1 P1500070
C*****   CONTINUATION OF STATEMENT TO 20 LINES,                3.2.4.3.3P1500080
C*****   AND USE OF SPECIAL CHARACTERS TO INDICATE CONTINUATION   3.2.4 P1500090
C*****  CONTINUATION LINE CAN CONTAIN FORTRAN CHARACTERS                P1500100
C*****  (OTHER THAN C IN COLUMN 1) IN COLUMNS 1 THRU 5 (CLARIFICATION 3)P1500110
C*****                                                                  P1500120
C*****  S P E C I F I C A T I O N S   SEGMENT 150                       P1500130
C*****                                                                  P0012970
C*****  WHEN EXECUTING ONLY SEGMENT 150, THE SPECIFICATION STATEMENTS   P0012975
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE  C=                      P0012980
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0012985
C*****                                                                  P0012990
C=    INTEGER AVI                                                       P0012995
C=    COMPLEX AVC,BVC,CVC,DVC,RVC                                       P0013000
      INTEGER AVI                                                       P150A1
      COMPLEX AVC,BVC,CVC,DVC,RVC                                       P150A2
C*****                                                                  P0013005
C*****  O U T O U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1500140
C*****                                                                  P0072540
C*****  WHEN EXECUTING ONLY SEGMENT 150, THE FOLLOWING STATEMENT        P0072545
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS  1  AND  2  REMOVED.     P0072550
C*****                                                                  P0072555
C=    NUVI = 6                                                          P0072560
      NUVI = 6                                                          P150B1
C*****                                                                  P0072565
      WRITE (NUVI, 1500)                                                P1500150
1 500 F  O  RM  A   T(  1   H1  ,   1   X      13   HMISC4 - (150)      P1500160
     X,1X,  2 3  HEFFECT OF BLANKS WITHIN    /   16X,   22HSTMNT AND CONP1500170
     YTINUATION/ 16X,  20HOF STMNT TO 20 LINES//                        P1500180
     I39H  ASA REFS. - 3.1.4.1  3.2.4.3.3  3.2.4//2X,7HRESULTS//)       P1500190
      AVC = (1   .0   ,  1    .0)                                       P1500200
      AVS = 1.      0                                                   P1500210
      B V S     =                2 .                    0               P1500220
      BVC=   (1 .0   ,-  1 .0)                                          P1500230
      RVC = (B VS +A  V   C*(  1 . +A VC *(  - 1.+    (1    .0,    1    P1500240
     T.  0   )   *(     -      1  .0+   A  V      C )    ))  )    /(    P1500250
     U4  .0   +     BV    C   *      (2     .   0     +     BVC      *  P1500260
     V(   -     A   V       S   + B  V  C   *(      0   .  5   +  B     P1500270
     WV   C  )        )      )    )                                     P1500280
      RVC         =               RV      C        +(-2.0,        +1       .0)P1500290
      W   RI    T E        (N   UV    I ,   15   02    )      R     VC  P1500300
1502  FORMAT( 2X, 2F8.4)                                                P1500310
C*****COMPLEX ARITHMETIC EXPRESSION                                     P1500320
C*****  STATEMENT LABEL NOT REFERENCED                              3.4 P1500330
1503  A                                                                 P1500340
VC=1.+V                                                                 P1500350
     -C                                                                 P1500360
     *     =                                                            P1500370
     /      (                                                           P1500380
     (1                                                                 P1500390
     ).                                                                 P1500400
     ,6                                                                 P1500410
     .0                                                                 P1500420
     I,                                                                 P1500430
     J3                                                                 P1500440
     K.                                                                 P1500450
     L2                                                                 P1500460
     M                         )                                        P1500470
C*****  CONTINUE STATEMENT WITH NO LABEL                            3.4 P1500480
      CONTINUE                                                          P1500490
      AVS = 0.625                                                       P1500500
      BVS = 2.0                                                         P1500510
      BVC = (1.0,-1.0)                                                  P1500520
      CVS = 2.5                                                         P1500530
      CVC = (2.5,2.5)                                                   P1500540
      DVC = (1.0986841, 0.4550899)                                      P1500550
      AVI = 2                                                           P1500560
      RVC                         =                                     P1500570
     B(AVC*AVS                                                          P1500580
     C+(1.6,3.2)                                                        P1500590
     D*AVS-AVC                                                          P1500600
     E*0.625                                                            P1500610
     F-(1.6,3.2)                                                        P1500620
     G*0.625                                                            P1500630
     H+BVS/BVC                                                          P1500640
     I-BVS/(1.0,-1.0)                                                   P1500650
     J+2.0/BVC+2.0/                                                     P1500660
     K(1.0,-1.0)+CVC/CVS                                                P1500670
     L-(2.5,2.5)/CVS+CVC/2.5                                            P1500680
     M+(2.5,2.5)/2.5+DVC**AVI                                           P1500690
     N-(1.0986841,0.4550899)**2                                         P1500700
     O+DVC**2                                                           P1500710
     P+                                                                 P1500720
     Q(1.0986841,0.4550899)                                             P1500730
     R**AVI)                                                            P1500740
     S**2/(0.0,72.0)                                                    P1500750
     T       -(1.0,0.0)                                                 P1500760
      W    R     I   T    E    (   N U V I  ,     1   5  0  1) R   V   C P1500770
15 01 FORM  AT(/          /2      X  ,  2     F      8       .        4 P1500780
1501 Z/ /  3      7H  TEST IS POSITIVE IF NUMBERS PRINTED/    2X        P1500790
     =,   1   7      HABOVE ARE 0.0,0.0         )                       P1500800
C*****     END OF TEST SEGMENT 150                                      P1500810
C*****  WHEN EXECUTING ONLY SEGMENT 150, THE STOP AND END CARDS         P1500820
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1500830
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1500840
C=    STOP                                                              P1500850
```

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C=    END                                                               P1500860
      STOP                                                              P150C1
      END                                                               P150C2
C***********************************************************************P1600010
C*****                                                                  P1600020
C*****                  BRFCP - (160)                                   P1600030
C*****                                                                  P1600040
C***********************************************************************P1600050
C*****  GENERAL PURPOSE                                          ASA REFP1600060
C*****    1.TO TEST REAL FUNCTIONS                                 8.3.1P1600070
C*****    2.DUMMY ARGUMENTS ARE REAL OR INTEGER VARIABLES,OR            P1600080
C*****      ARRAY NAMES                                                 P1600090
C*****    3.FUNCTIONS CONTAIN UP TO 20 ARGUMENTS                        P1600100
C*****    4.IN REFERENCE, ACTUAL ARGUMENTS ARE VARIABLE NAME,           P1600110
C*****      ARRAY NAME, ARRAY ELEMENT NAME, OR AN ARITHMETIC            P1600120
C*****      EXPRESSION                                             8.3.2P1600130
C*****  RESTRICTIONS OBSERVED                                           P1600140
C*****    1.ITEMS(2),(3),(4),(5),(6) OF PARAGRAPH 8.3.1                 P1600150
C*****    2.LAST SENTENCE OF PARAGRAPH 3.2                              P1600160
C*****    THIS SEGMENT IS TO BE RUN WITH SEGMENTS                       P1600170
C*****     400, 420, 430, 440, 450, 460                    WHICH        P1600180
C*****     CONTAINS ALL FUNCTIONS BEING TESTED HERE.                    P1600190
C*****                                                                  P1600200
C*****  S P E C I F I C A T I O N S  SEGMENT 160                        P1600210
C*****                                                                  P0013010
C*****  WHEN EXECUTING ONLY SEGMENT 160, THE SPECIFICATION STATEMENTS   P0013015
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013020
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013025
C*****                                                                  P0013030
C=    DIMENSION A1S(5),A2S(2,2)                                         P0013035
      DIMENSION A1S(5),A2S(2,2)                                         P160A1
C*****                                                                  P0013040
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1600220
C*****  WHEN EXECUTING ONLY SEGMENT 160, THE FOLLOWING STATEMENT        P0072570
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072575
C*****                                                                  P0072580
C=    NUVI = 6                                                          P0072585
      NUVI = 6                                                          P160B1
      WRITE(NUVI,1604)                                                  P1600230
1604  FORMAT(1H1,1X,37HBRFCP - (160) REAL EXTERNAL FUNCTIONS/           P1600240
     1/2X,16HASA REF. - 8.3.1//28H  RESULTS SHOULD BE POSITIVE)         P1600250
      IAVI=2                                                            P1600260
      A1S(1)=1.0                                                        P1600270
      A1S(2)=1.0                                                        P1600280
      A2S(2,2)=1.0                                                      P1600290
      A2S(2,1)=1.0                                                      P1600300
      AVS=1.0                                                           P1600310
      BVS=2.0                                                           P1600320
      CVS=1.0                                                           P1600330
      DVS=1.0                                                           P1600340
      EVS=1.0                                                           P1600350
      IVI=AFS(2.0)-8.0                                                  P1600360
      MAVI=1                                                            P1600370
      IF(IVI)1600,1601,1600                                             P1600380
 1605 IVI=BFS(2.0,BVS)-4.0                                              P1600390
      MAVI=2                                                            P1600400
      IF(IVI)1600,1601,1600                                             P1600410
 1606 IVI = CFS(2) -16.0                                                P1600420
      MAVI=3                                                            P1600430
      IF(IVI)1600,1601,1600                                             P1600440
 1607 IVI=DFS(2,IAVI)-1.0                                               P1600450
      MAVI=4                                                            P1600460
      IF(IVI)1600,1601,1600                                             P1600470
 160  IVI=EFS(A1S)-2.0                                                  P1600480
      MAVI=5                                                            P1600490
      IF(IVI)1600,1601,1600                                             P1600500
 1609 IVI=FFS(IAVI,AVS,+2,-1.0,A1S,IAVI,CVS,A1S,1.0,IAVI,A1S,A1S,BVS,DVSP1600510
     1,A1S(1),A2S,A2S,A2S,EVS+1.0,IAVI-1) + 1.0                         P1600520
```

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      MAVI=6                                                            P1600530
      IF(IVI) 1600,1601,1600                                            P1600540
 1600 WRITE (NUVI,1602)MAVI                                             P1600550
      GO TO 7001                                                        P1600560
 1601 WRITE (NUVI,1603)MAVI                                             P1600570
1602  FORMAT (//2X,5HTEST ,I1,12H IS NEGATIVE)                          P1600580
1603  FORMAT (//2X,5HTEST ,I1,12H IS POSITIVE)                          P1600590
 7001 GO TO (1605,1606,1607,1608,1609,7000  ),MAVI                      P1600600
 7000 CONTINUE                                                          P1600610
C*****    END OF TEST SEGMENT 160                                       P1600620
C*****  WHEN EXECUTING ONLY SEGMENT 160, THE STOP   AND   END CARDS     P1600630
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=  IN              P1600640
C*****  COLUMNS  1  AND  2  REMOVED.                                    P1600650
C=    STOP                                                              P1600660
C=    END                                                               P1600670
      STOP                                                              P160C1
      END                                                               P160C2
C***********************************************************************P4000010
C*****                                                                  P4000020
C*****                               AFS - (400)                        P4000030
C*****                                                                  P4000040
C***********************************************************************P4000050
C*****REAL FUNCTION OF REAL ARGUMENT (TEST 1)                           P4000060
      FUNCTION  AFS(AWVS)                                               P4000070
      AFS=4.0*AWVS                                                      P4000080
      RETURN                                                            P4000090
      END                                                               P4000100
C***********************************************************************P4200010
C*****                                                                  P4200020
C*****                               BFS - (420)                        P4200030
C*****                                                                  P4200040
C***********************************************************************P4200050
C*****REAL FUNCTION OF REAL ARGUMENTS (TEST 2)                          P4200060
      FUNCTION BFS(AWVS,BWVS)                                           P4200070
      BFS=AWVS+BWVS                                                     P4200080
      RETURN                                                            P4200090
      END                                                               P4200100
C***********************************************************************P4300010
C*****                                                                  P4300020
C*****                               CFS - (430)                        P4300030
C*****                                                                  P4300040
C***********************************************************************P4300050
C*****REAL FUNCTION OF INTEGER ARGUMENT  (TEST 3)                       P4300060
      FUNCTION  CFS(IWVI)                                               P4300070
      CFS=4.0**IWVI                                                     P4300080
      RETURN                                                            P4300090
      END                                                               P4300100
C***********************************************************************P4400010
C*****                                                                  P4400020
C*****                               DFS - (440)                        P4400030
C*****                                                                  P4400040
C***********************************************************************P4400050
C*****REAL FUNCTION OF INTEGER ARGUMENTS (TEST 4)                       P4400060
      FUNCTION DFS(IWVI,JWVI)                                           P4400070
      KVI  = IWVI - JWVI                                                P4400080
      DFS=4.6**KVI                                                      P4400090
      RETURN                                                            P4400100
      END                                                               P4400110
C***********************************************************************P4500010
C*****                                                                  P4500020
C*****                               EFS - (450)                        P4500030
C*****                                                                  P4500040
C***********************************************************************P4500050
C*****REAL FUNCTION OF ARRAY NAME(TEST 5)                               P4500060
      FUNCTION EFS(AW1S)                                                P4500070
      DIMENSION AW1S(2)                                                 P4500080
      EFS=AW1S(1)+AW1S(2)                                               P4500090
      RETURN                                                            P4500100
      END                                                               P4500110
C***********************************************************************P4600010
C*****                                                                  P4600020
C*****                       FFS - (460)                                P4600030
C*****                                                                  P4600040
C***********************************************************************P4600050
C*****REAL FUNCTION OF DIFFERENT TYPES OF ARGUMENTS(TEST 6)             P4600060
      FUNCTION FFS(IWVI,AWVS,JWVI,BWVS,AW1S,KWVI,CWVS,BW1S,DWVS,LWVI,   P4600070
     1CW1S,DW1S,EWVS,FWVS,GWVS,BW2S,CW2S,DW2S,HWVS,MWVI)                P4600080
      DIMENSION  AW1S(2),BW1S(2),CW1S(2),DW1S(2),BW2S(2,2),CW2S(2,2),   P4600090
     1DW2S(2,2)                                                         P4600100
      FFS=AWVS**IWVI-BWVS**JWVI+AW1S(1)-CWVS**KWVI+BW1S(2)-DWVS+CW1S(1) P4600110
     1**LWVI+DW1S(1)-EWVS+FWVS-GWVS+BW2S(2,1)-CW2S(2,2)+DW2S(2,2)-HWVS**P4600120
     2MWVI                                                              P4600130
      RETURN                                                            P4600140
      END                                                               P4600150
C***********************************************************************P1610010
C*****                                                                  P1610020
C*****                  BIFCP - (161)                                   P1610030
C*****                                                                  P1610040
C***********************************************************************P1610050
C*****  GENERAL PURPOSE                                          ASA REFP1610060
C*****    1-TO TEST INTEGER FUNCTIONS                              8.3.1P1610070
C*****    2-DUMMY ARGUMENTS ARE REAL OR INTEGER VARIABLES OR            P1610080
C*****      ARRAY NAMES                                            8.3.1P1610090
C*****    3-FUNCTIONS CONTAIN UP TO 20 ARGUMENTS                        P1610100
C*****    4-IN REFERENCE,ACTUAL ARGUMENTS ARE VARIABLE NAME,            P1610110
C*****     ARRAY NAME,ARRAY ELEMENT NAME,OR AN ARITHMETIC               P1610120
C*****     EXPRESSION                                              8.3.2P1610130
C*****RESTRICTIONS OBSERVED                                             P1610140
C*****    1-ITEMS (2),(3),(4),(5),(6) OF PARAGRAPH  8.3.1               P1610150
C*****    2-LAST SENTENCE OF PARAGRAPH 3.2                              P1610160
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1610170
C*****     401, 421, 431, 441, 451, 461  WHICH                          P1610180
C*****     CONTAINS ALL FUNCTIONS BEING TESTED HERE.                    P1610190
C*****                                                                  P1610200
C*****  S P E C I F I C A T I O N S  SEGMENT 161                        P1610210
C*****                                                                  P0013050
C*****  WHEN EXECUTING ONLY SEGMENT 161, THE SPECIFICATION STATEMENTS   P0013055
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013060
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0013065
C*****                                                                  P0013070
C=    DIMENSION A1S(5)                                                  P0013075
C=    INTEGER I1I(5)                                                    P0013080
      DIMENSION A1S(5)                                                  P161A1
      INTEGER I1I(5)                                                    P161A2
C*****                                                                  P0013085
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1610220
C*****                                                                  P0072590
C*****  WHEN EXECUTING ONLY SEGMENT 161, THE STATEMENT  NUVI = 6        P0072595
C*****  MUST HAVE THE C= IN COLUMNS  1  AND 2  REMOVED.                 P0072600
C*****                                                                  P0072605
C=    NUVI = 6                                                          P0072610
      NUVI = 6                                                          P161B1
C*****                                                                  P0072615
      WRITE(NUVI,1614)                                                  P1610230
1614  FORMAT(1H1,1X,40HBIFCP - (161) INTEGER EXTERNAL FUNCTIONS/        P1610240
     1 16X,26HWITH INTEGER AND REAL ARGS//2X,16HASA REF. - 8.3.1//      P1610250
     228H  RESULTS SHOULD BE POSITIVE)                                  P1610260
      IAVI=2                                                            P1610270
      A1S(1)=1.0                                                        P1610280
      A1S(2)=1.0                                                        P1610290
      I1I(1)=1                                                          P1610300
      I1I(2)=1                                                          P1610310
      AVS=1.0                                                           P1610320
      BVS=2.0                                                           P1610330
      CVS=1.0                                                           P1610340
      DVS=1.0                                                           P1610350
      EVS=1.0                                                           P1610360
      IVI=IAFI(2.0) - 8                                                 P1610370
      MAVI=1                                                            P1610380
      IF (IVI) 1610,1611,1610                                           P1610390
 1615 IVI=IBFI(2.0,BVS)-4                                               P1610400
      MAVI=2                                                            P1610410
      IF (IVI) 1610,1611,1610                                           P1610420
 1616 IVI = ICFI(2) - 16                                                P1610430
      MAVI=3                                                            P1610440
      IF (IVI) 1610,1611,1610                                           P1610450
 1617 IVI=IDFI(2,IAVI)-1                                                P1610460
      MAVI=4                                                            P1610470
      IF (IVI) 1610,1611,1610                                           P1610480
1618  IVI=IEFI(I1I)-2                                                   P1610490
      MAVI=5                                                            P1610500
      IF (IVI) 1610,1611,1610                                           P1610510
 1619 IVI=IFFI(IAVI,AVS,2,-1.0,A1S,IAVI,CVS,A1S,1.0,IAVI,A1S,A1S,BVS,   P1610520
     1DVS,A1S(1),A1S,A1S,A1S,EVS+1.0,IAVI-1) + 1                        P1610530
      MAVI=6                                                            P1610540
      IF(IVI) 1610,1611,1610                                            P1610550
 1610 WRITE(NUVI,1612)MAVI                                              P1610560
      GO TO 7002                                                        P1610570
 1611 WRITE(NUVI,1613)MAVI                                              P1610580
1612  FORMAT (//2X,5HTEST ,I1,12H IS NEGATIVE)                          P1610590
1613  FORMAT (//2X,5HTEST ,I1,12H IS POSITIVE)                          P1610600
 7002 GO TO (1615,1616,1617,1618,1619,7003),MAVI                        P1610610
 7003 CONTINUE                                                          P1610620
C*****    END OF TEST SEGMENT 161                                       P1610630
C*****  WHEN EXECUTING ONLY SEGMENT 161, THE  STOP  AND  END  CARDS     P1610640
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1610650
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1610660
C=    STOP                                                              P1610670
C=    END                                                               P1610680
      STOP                                                              P161C1
      END                                                               P161C2
C***********************************************************************P4010010
C*****                                                                  P4010020
C*****                       IAFI - (401)                               P4010030
C*****                                                                  P4010040
C***********************************************************************P4010050
C*****INTEGER FUNCTION OF REAL ARGUMENT (TEST 1)                        P4010060
      FUNCTION IAFI(AWVS)                                               P4010070
      IAFI=4.0*AWVS                                                     P4010080
      RETURN                                                            P4010090
      END                                                               P4010100
C***********************************************************************P4210010
C*****                                                                  P4210020
C*****                       IBFI - (421)                               P4210030
C*****                                                                  P4210040
C***********************************************************************P4210050
C*****INTEGER FUNCTION OF TWO REAL ARGUMENTS (TEST 2)                   P4210060
      FUNCTION IBFI(AWVS,BWVS)                                          P4210070
      IBFI=AWVS+BWVS                                                    P4210080
      RETURN                                                            P4210090
      END                                                               P4210100
C***********************************************************************P4310010
C*****                                                                  P4310020
C*****                       ICFI - (431)                               P4310030
C*****                                                                  P4310040
C***********************************************************************P4310050
C*****INTEGER FUNCTION OF INTEGER ARGUMENT(TEST 3)                      P4310060
      FUNCTION ICFI(IWVI)                                               P4310070
      ICFI=4.0**IWVI                                                    P4310080
      RETURN                                                            P4310090
      END                                                               P4310100
C***********************************************************************P4410010
C*****                                                                  P4410020
C*****                       IDFI - (441)                               P4410030
```

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C*****                                                                  P4410040
C***********************************************************************P4410050
C*****INTEGER FUNCTION OF INTEGER ARGUMENTS (TEST 4)                     P4410060
      INTEGER FUNCTION IDFI (IWVI, JWVI)                                P4410070
      REAL KUVS                                                         P4410080
      IDFI = IWVI - JWVI                                                P4410090
      IDFI = KUVS ** IDFI                                               P4410100
      RETURN                                                            P4410110
      DATA KUVS /4.6/                                                   P4410120
      E N D                                                             P4410130
C***********************************************************************P4510010
C*****                                                                  P4510020
C*****                       IEFI - (451)                               P4510030
C*****                                                                  P4510040
C***********************************************************************P4510050
C*****INTEGER FUNCTION OF ARRAY NAME (TEST 5)                            P4510060
      FUNCTION IEFI(IAW1I)                                              P4510070
      DIMENSION IAW1I(2)                                                P4510080
      IEFI=IAW1I(1)+IAW1I(2)                                            P4510090
      RETURN                                                            P4510100
      END                                                               P4510110
C***********************************************************************P4610010
C*****                                                                  P4610020
C*****                       IFFI - (461)                               P4610030
C*****                                                                  P4610040
C***********************************************************************P4610050
C*****INTEGER FUNCTION OF DIFFERENT TYPES OF ARGUMENTS(TEST 6)           P4610060
      FUNCTION IFFI(IWVI,AWVS,JWVI,BWVS,AW1S,KWVI,CWVS,BW1S,DWVS,LWVI,  P4610070
     1CW1S,DW1S,EWVS,FWVS,GWVS,EW1S,GW1S,HW1S,HWVS,MWVI)                P4610080
      DIMENSION AW1S(2),BW1S(2),CW1S(2),DW1S(2),EW1S(5), GW1S(5),       P4610090
     1 HW1S(5)                                                          P4610100
      IFFI=AWVS**IWVI-BWVS**JWVI+AW1S(1)-CWVS**KWVI+BW1S(2)-DWVS+CW1S(1)P4610110
     1**LWVI+DW1S(1)-EWVS+FWVS-GWVS+EW1S(1)  -GW1S(2)  +HW1S(2)  -HWVS**P4610120
     2MWVI                                                              P4610130
      RETURN                                                            P4610140
      END                                                               P4610150
C***********************************************************************P1620010
C*****                                                                  P1620020
C*****                  FRFCP - (162)                                   P1620030
C*****                                                                  P1620040
C***********************************************************************P1620050
C*****                   GENERAL PURPOSE                        ASA REF P1620060
C*****  1.TO TEST REAL FUNCTIONS IN FULL FORTRAN                        P1620070
C*****  2.THIS SEGMENT COMPLETES SEGMENT (160) IN ORDER TO TEST         P1620080
C*****    FOR ALL FEATURES REQUIRED IN FULL FORTRAN                8.3.1P1620090
C*****  3.DUMMY ARGUMENTS CAN BE INTEGER(TESTED IN 160),REAL(TESTED IN  P1620100
C*****    160),ARRAY NAME(TESTED IN 160),DOUBLE PRECISION,COMPLEX,      P1620110
C*****    LOGICAL OR EXTERNAL PROCEDURE                            8.3.1P1620120
C*****  4.DUMMY ARGUMENTS MAY BE REDEFINED IN SUBPROGRAM(ITEM 4)   8.3.1P1620130
C*****  5.IN REFERENCE, ACTUAL ARGUMENTS MAY BE AS IN (160) AND         P1620140
C*****    BESIDES EXTERNAL PROCEDURE. IN THIS CASE, EXTERNAL       8.3.2P1620150
C*****    PROCEDURE IS REFERENCED BY AN EXTERNAL STATEMENT              P1620160
C*****  6.USE CAN BE MADE OF ADJUSTABLE DIMENSION                       P1620170
C*****RESTRICTIONS OBSERVED                                             P1620180
C*****  1.ITEMS (1), (2), (3), (5) OF 8.3.1                             P1620190
C*****  2.PARAGRAPH 8.3.2, LINE 18 TO END OF PARAGRAPH                  P1620200
C*****     THIS SEGMENT   USES   5 REAL FUNCTIONS                       P1620210
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1620220
C*****     402, 422, 432, 442, 452   WHICH                              P1620230
C*****    WHICH CONTAINS ALL FUNCTIONS BEING TESTED HERE                P1620240
C*****                                                                  P1620250
C*****  S P E C I F I C A T I O N S  SEGMENT 162                        P1620260
C*****                                                                  P0013090
C*****  WHEN EXECUTING ONLY SEGMENT 162, THE SPECIFICATION STATEMENTS   P0013095
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013100
C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0013105
C*****                                                                  P0013110
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P0013115
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C=    INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P0013120
C=    REAL JRFS,IRFS                                                    P0013125
C=    LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB                        P0013130
C=    DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P0013135
C=    COMPLEX AVC,BVC,A1C(12),A2C(2,2),A3C(2,2,1)                       P0013140
C=    COMMON AXVS,CXVS                                                  P0013145
C=    EXTERNAL GFS                                                      P0013150
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P162A1
      INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P162A2
      REAL JRFS,IRFS                                                    P162A3
      LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB                        P162A4
      DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P162A5
      COMPLEX AVC,BVC,A1C(12),A2C(2,2),A3C(2,2,1)                       P162A6
      COMMON AXVS,CXVS                                                  P162A7
      EXTERNAL GFS                                                      P162A8
C*****                                                                  P0013155
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1620270
C*****                                                                  P0072620
C*****  WHEN EXECUTING ONLY SEGMENT 162, THE STATEMENT  NUVI = 6        P0072625
C*****  MUST HAVE THE C= IN COLUMNS  1  AND 2  REMOVED.                 P0072630
C*****                                                                  P0072635
C=    NUVI = 6                                                          P0072640
      NUVI = 6                                                          P162B1
C*****                                                                  P0072645
      WRITE (NUVI,1624)                                                 P1620280
1624  FORMAT(1H1,1X,33HFRFCP - (162) REAL FUNCTIONS WITH/10X,31HLOGICAL,P1620290
     1 D.P., AND COMPLEX ARGS//16H  ASA REF. 8.3.1//                    P1620300
     228H  RESULTS SHOULD BE POSITIVE)                                  P1620310
C*****TEST 1                                                            P1620320
      AVD = 1.0D0                                                       P1620330
      MAVI = 1                                                          P1620340
      IVI = 1.0-GFS(AVD)                                                P1620350
      IF (IVI) 1620,1621,1620                                           P1620360
C*****TEST 2                                                            P1620370
 1625 MAVI =2                                                           P1620380
      AVC = (1.0,-1.0)                                                  P1620390
      BVC = (1.0,1.0)                                                   P1620400
      IVI = HFS(AVC,BVC)                                                P1620410
      IF (IVI) 1620,1621,1620                                           P1620420
C*****TEST 3                                                            P1620430
 1626 MAVI=3                                                            P1620440
      AVB = .TRUE.                                                      P1620450
      IVI = IRFS(AVB)*2.0                                               P1620460
      AVB = .FALSE.                                                     P1620470
      JVI = IRFS(AVB)*4.0                                               P1620480
      LVI = IVI + JVI - 4                                               P1620490
      IF (LVI) 1620,1621,1620                                           P1620500
C*****TEST 4                                                            P1620510
 1627 MAVI=4                                                            P1620520
      IVI = JRFS(AVD,GFS)                                               P1620530
      IF (IVI-1) 1620,1621,1620                                         P1620540
C*****TEST 5,6,7                                                        P1620550
 1628 AXVS = 1.0                                                        P1620560
      AVS = 1.0                                                         P1620570
      A1S(1) = 1.0                                                      P1620580
      A2S(1,1) = 1.0                                                    P1620590
      A3S(1,1,1) = 1.0                                                  P1620600
      AVB = .FALSE.                                                     P1620610
      A1B(1) = .FALSE.                                                  P1620620
      A2B(1,1) = .FALSE.                                                P1620630
      A3B(1,1,1) = .FALSE.                                              P1620640
      IAVI = 1                                                          P1620650
      I1I(1) = 1                                                        P1620660
      I2I(1,1) =1                                                       P1620670
      I3I(1,1,1) =1                                                     P1620680
      A1C(1) = (1.0,1.0)                                                P1620690
      A2C(1,1) = (1.0,1.0)                                              P1620700
      A3C(1,1,1) = (-2.0,-2.0)                                          P1620710
      AVD = 1.0D0                                                       P1620720
      A1D(1) = 1.0D0                                                    P1620730
      A2D(1,1) = 1.0D0                                                  P1620740
      A3D(1,1,1) = 1.0D0                                                P1620750
      IVI= RFS(AVS,IAVI,AVB,AVC,AVD,A1S,A2S,A3S,I1I,I2I,I3I,A1B,A2B,A3B,P1620760
     1 A1C,A2C,A3C,A1D,A2D,A3D,GFS)                                     P1620770
      MAVI = 5                                                          P1620780
      IF (IVI) 1620,1621,1620                                           P1620790
 1629 MAVI = 6                                                          P1620800
      BVB = AVB.AND.A1B(1).AND.A2B(1,1).AND.A3B(1,1,1)                  P1620810
      IF (BVB) GO TO 1621                                               P1620820
      GO TO 1620                                                        P1620830
 7010 IVI=REAL(AVC)                                                     P1620840
      JVI = AIMAG(AVC)                                                  P1620850
      MAVI = 7                                                          P1620860
      BVB = IVI.EQ.0.AND.JVI.EQ.0                                       P1620870
      IF (BVB) GO TO 1621                                               P1620880
1620  WRITE (NUVI,1622) MAVI                                            P1620890
      GO TO 7011                                                        P1620900
1621  WRITE (NUVI,1623) MAVI                                            P1620910
 1622 FORMAT(//2X,5HTEST ,I1,13H IS NEGATIVE.)                          P1620920
 1623 FORMAT (//2X,5HTEST ,I1,13H IS POSITIVE.)                         P1620930
 7011 GO TO (1625,1626,1627,1628,1629,7010,7012),MAVI                   P1620940
 7012 CONTINUE                                                          P1620950
C*****     END OF TEST SEGMENT 162                                      P1620960
C*****  WHEN EXECUTING ONLY SEGMENT 162, THE  STOP  AND  END  CARDS     P1620970
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1620980
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1620990
C=    STOP                                                              P1621000
C=    END                                                               P1621010
      STOP                                                              P162C1
      END                                                               P162C2
C***********************************************************************P4020010
C*****                                                                  P4020020
C*****                       GFS - (402)                                P4020030
C*****                                                                  P4020040
C***********************************************************************P4020050
C***** REAL FUNCTION OF DOUBLE PRECISION ARGUMENT (TEST 1)              P4020060
      FUNCTION  GFS(AWVD)                                               P4020070
      DOUBLE PRECISION  AWVD                                            P4020080
      GFS = AWVD                                                        P4020090
      RETURN                                                            P4020100
      END                                                               P4020110
C***********************************************************************P4220010
C*****                                                                  P4220020
C*****                       HFS - (422)                                P4220030
C*****                                                                  P4220040
C***********************************************************************P4220050
C*****REAL FUNCTION OF COMPLEX ARGUMENT (TEST 2)                        P4220060
      FUNCTION HFS(AWVC,BWVC)                                           P4220070
      COMPLEX  AWVC,BWVC,CVC                                            P4220080
      CVC  = AWVC * BWVC                                                P4220090
      HFS = AIMAG(CVC)                                                  P4220100
      RETURN                                                            P4220110
      END                                                               P4220120
C***********************************************************************P4320010
C*****                                                                  P4320020
C*****                       IRFS -  (432)                              P4320030
C*****                                                                  P4320040
C***********************************************************************P4320050
C*****REAL FUNCTION OF LOGICAL ARGUMENT (TEST 3)                        P4320060
      REAL FUNCTION IRFS(AWVB)                                          P4320070
      LOGICAL  AWVB                                                     P4320080
      IF (AWVB) GO TO 4321                                              P4320090
4320  IF (.NOT. AWVB) GO TO 4322                                        P4320100
      RETURN                                                            P4320110
4321  IRFS = 2.0                                                        P4320120
      GO TO 4320                                                        P4320130
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4322  IRFS = 0.0                                                        P4320140
      RETURN                                                            P4320150
      ENO                                                               P4320160
C***********************************************************************P4420010
C*****                                                                  P4420020
C*****                         JRFS - (442)                             P4420030
C*****                                                                  P4420040
C***********************************************************************P4420050
C*****REAL FUNCTION OF EXTERNAL PROCEOURE (TEST 4)                      P4420060
      REAL FUNCTION JRFS( BWVO,BWFS)                                    P4420070
      OOUBLE PRECISION BWVD                                             P4420080
      JRFS = BWFS(BWVO)                                                 P4420090
      RETURN                                                            P4420100
      ENO                                                               P4420110
C***********************************************************************P4520010
C*****                                                                  P4520020
C*****                         RFS - (452)                              P4520030
C*****                                                                  P4520040
C***********************************************************************P4520050
C*****REAL FUNCTION OF DIFFERENT TYPES OF ARGUMENTS. USE IS MAOE OF     P4520060
C*****ADJUSTABLE OIMENSION (TEST 5, 6, 7)                               P4520070
      FUNCTION RFS(AWVS,IWVI,AWVB,AWVC,AWVO,AW1S,AW2S,AW3S,IW1I,IW2I,   P4520080
     1IW3I,AW1B,AW2B,AW3B,AW1C,AW2C,AW3C,AW1O,AW2O,AW3O,AWFS)           P4520090
      LOGICAL AWVB,AW1B,AW2B,AW3B                                       P4520100
      COMPLEX AWVC,AW1C,AW2C,AW3C                                       P4520110
      OOUBLE PRECISION AWVO, AW1O,AW2D,AW3D                             P4520120
      DIMENSION AW1S(IWVI),AW2S(IWVI,IWVI),AW3S(IWVI,IWVI,IWVI) ,       P4520130
     1          IW1I(IWVI),IW2I(IWVI,IWVI),IW3I(IWVI,IWVI,IWVI) ,       P4520140
     2          AW1B(IWVI),AW2B(IWVI,IWVI),AW3B(IWVI,IWVI,IWVI) ,       P4520150
     3          AW1C(IWVI),AW2C(IWVI,IWVI),AW3C(IWVI,IWVI,IWVI) ,       P4520160
     4          AW1O(IWVI),AW2D(IWVI,IWVI),AW3O(IWVI,IWVI,IWVI)         P4520170
      COMMON BXVS                                                       P4520180
      RFS =AWVS**IWVI+AW1S(IWVI)**IW1I(IWVI)-AW2S(IWVI,IWVI)**IW2I      P4520190
     1 (IWVI,IWVI)+AW3S(IWVI,IWVI,IWVI)**IW3I(IWVI,IWVI,IWVI)-AWVO+     P4520200
     2 AW1O(IWVI)-AW2O(IWVI,IWVI)-AW3O(IWVI,IWVI,IWVI)+AWFS(AWVO)-BXVS  P4520210
      AWVB = IWVI.EQ.1                                                  P4520220
      AW1B(IWVI) = IWVI .EQ. 1                                          P4520230
      AW2B(IWVI,IWVI) = IWVI .EQ. 1                                     P4520240
      AW3B(IWVI,IWVI,IWVI) = IWVI.EQ.1                                  P4520250
      AWVC = AW1C(IWVI) +AW2C(IWVI,IWVI)+AW3C(IWVI,IWVI,IWVI)           P4520260
      RETURN                                                            P4520270
C*****    END OF TEST SEGMENT 402                                       P4520280
      ENO                                                               P4520290
C***********************************************************************P1630010
C*****                                                                  P1630020
C*****                    FIFCP - (163)                                 P1630030
C*****                                                                  P1630040
C***********************************************************************P1630050
C*****                    GENERAL PURPOSE                       ASA REF P1630060
C*****  1.TO TEST INTEGER FUNCTIONS IN FULL FORTRAN                     P1630070
C*****  2.THIS SEGMENT COMPLETES SEGMENT (161) IN OROER TO TEST         P1630080
C*****    FOR ALL FEATURES REQUIRED IN FULL FORTRAN.              8.3.1 P1630090
C*****  3.OUMMY ARGUMENTS CAN BE INTEGER(TESTEO IN 161),REAL(TESTED     P1630100
C*****    IN 161),OOUBLE PRECISION,COMPLEX,LOGICAL,OR EXTERNAL PROCEDUREP1630110
C*****  4.OUMMY ARGUMENTS MAY BE REOIFINEO IN SUBPROGRAM(ITEM 4)        P1630120
C*****  5. IN REFERENCE,ACTUAL ARGUMENTS MAY BE AS IN (161) ANO BESIDES P1630130
C*****    EXTERNAL PROCEDURE.IN THIS CASE,EXTERNAL PROCEDURE IS         P1630140
C*****    REFERENCEO BY AN EXTERNAL STATEMENT.                          P1630150
C*****  6. USE CAN BE MAOE OF AOJUSTABLE OIMENSION.                     P1630160
C*****RESTRICTIONS OBSERVEO                                             P1630170
C*****   1.ITEMS (1),(2),(3),(5), OF 8.3.1                              P1630180
C*****  2 PARAGRAPH 8.3.2,LINE 18 TO ENO OF PARAGRAPH                   P1630190
C*****     THIS SEGMENT   USES   5 INTEGER FUNCTIONS                    P1630200
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1630210
C*****     403, 423, 433, 443, 453                         WHICH        P1630220
C*****    WHICH CONTAINS ALL FUNCTIONS BEING TESTED HERE                P1630230
C*****                                                                  P1630240
C*****  S P E C I F I C A T I O N S  SEGMENT 163                        P1630250
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C*****                                                                  P0013160
C*****  WHEN EXECUTING DNLY SEGMENT 163, THE SPECIFICATION STATEMENTS   P0013165
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013170
C*****  IN COLUMNS 1  AND  2  REMDVED.                                  P0013175
C*****                                                                  P0013180
C=    EXTERNAL IFI                                                      P0013185
C=    DIMENSIDN A1S(5),A2S(2,2),A3S(3,3,3)                              P0013190
C=    INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P0013195
C=    LOGICAL AVB,BVB,A1B(2),A2B(2,2),A3B(2,2,2)                        P0013200
C=    DDUBLE PRECISIDN AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P0013205
C=    COMPLEX AVC,BVC,A1C(12),A2C(2,2),A3C(2,2,1)                       P0013210
C=    CDMMDN AXVS,CXVS                                                  P0013215
      EXTERNAL IFI                                                      P163A1
      DIMENSIDN A1S(5),A2S(2,2),A3S(3,3,3)                              P163A2
      INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P163A3
      LDGICAL AVB,BVB,A1B(2),A2B(2,2),A3B(2,2,2)                        P163A4
      DOUBLE PRECISIDN AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P163A5
      CDMPLEX AVC,BVC,A1C(12),A2C(2,2),A3C(2,2,1)                       P163A6
      COMMDN AXVS,CXVS                                                  P163A7
C*****                                                                  P0013220
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P1630260
C*****                                                                  P0072650
C*****  WHEN EXECUTING DNLY SEGMENT 163, THE STATEMENT  NUVI = 6        P0072655
C*****  MUST HAVE THE C= IN CDLUMNS  1  AND 2  REMDVED.                 P0072660
C*****                                                                  P0072665
C=    NUVI = 6                                                          P0072670
      NUVI = 6                                                          P163B1
C*****                                                                  P0072675
      WRITE(NUVI,1634)                                                  P1630270
 1634 FORMAT (1H1,1X,33HFIFCP - (163) INTEGER FUNCTION IN/ 16X,         P1630280
     1 12HFULL FORTRAN//2X,                                             P1630290
     214HASA REF. 8.3.1//28H  RESULTS SHDULD BE POSITIVE)               P1630300
C***** TEST 1                                                           P1630310
      AVD=1.0D0                                                         P1630320
      MAVI=1                                                            P1630330
      IVI=1-IFI(AVD)                                                    P1630340
      IF (IVI) 1630,1631,1630                                           P1630350
C***** TEST 2                                                           P1630360
 1635 MAVI=2                                                            P1630370
      AVC=(1.0, 1.0)                                                    P1630380
      BVC=(1.0,-1.0)                                                    P1630390
      IVI=JFI(AVC,BVC)                                                  P1630400
      IF (IVI) 1630,1631,1630                                           P1630410
C*****TEST 3                                                            P1630420
 1636 MAVI=3                                                            P1630430
      AVB=.TRUE.                                                        P1630440
      IVI=KFI(AVB)*2                                                    P1630450
      AVB=.FALSE.                                                       P1630460
      JVI=IVI+KFI(AVB)-4                                                P1630470
      IF (JVI) 1630,1631,1630                                           P1630480
C***** TEST 4                                                           P1630490
 1637 MAVI=4                                                            P1630500
      IVI=LFI(AVD,IFI)-1                                                P1630510
      IF (IVI) 1630,1631,1630                                           P1630520
C***** TESTS 5,6,7                                                      P1630530
 1638 AXVS=1.0                                                          P1630540
      AVS = 1.                                                          P1630550
      A1S(1)=1.0                                                        P1630560
      A2S(1,1)=1.0                                                      P1630570
      A3S(1,1,1)=1.0                                                    P1630580
      IAVI=1                                                            P1630590
      I1I(1) = 1                                                        P1630600
      I2I(1,1)=1                                                        P1630610
      I3I(1,1,1)=1                                                      P1630620
      A1C(1)=(1.0,1.0)                                                  P1630630
      A2C(1,1)=(1.0,1.0)                                                P1630640
      A3C(1,1,1)=(-2.0,-2.0)                                            P1630650
      AVD=1.0D0                                                         P1630660
      A1D(1)=1.0D0                                                      P1630670
      A2D(1,1)=1.0D0                                                    P1630680
      A3D(1,1,1)=1.0D0                                                  P1630690
      IVI=MFI(AVS,IAVI,AVB,AVC,AVD,A1S,A2S,A3S,I1I,I2I,I3I,A1B,A2B,A3B, P1630700
     1A1C,A2C,A3C,A1D,A2D,A3D,IFI)                                      P1630710
      MAVI=5                                                            P1630720
      IF (IVI) 1630,1631,1630                                           P1630730
 1639 MAVI=6                                                            P1630740
      BVB=AVB.AND.A1B(1).AND.A2B(1,1).AND.A3B(1,1,1)                    P1630750
      IF (BVB) GO TO 1631                                               P1630760
      IF (.NOT.BVB) GO TO 1630                                          P1630770
 7007 IVI=REAL(AVC)                                                     P1630780
      JVI=AIMAG(AVC)                                                    P1630790
      MAVI=7                                                            P1630800
      IF (IVI+JVI) 1630,1631,1630                                       P1630810
 1630 WRITE(NUVI,1632) MAVI                                             P1630820
      GO TO 7008                                                        P1630830
 1631 WRITE(NUVI,1633) MAVI                                             P1630840
 1632 FORMAT (//2X,5HTEST ,I2,12H IS NEGATIVE)                          P1630850
 1633 FORMAT(//2X,5HTEST , I2,12H IS POSITIVE)                          P1630860
 7008      GO TO (1635,1636,1637,1638,1639,7007,7009),MAVI              P1630870
 7009 CONTINUE                                                          P1630880
C*****    END OF TEST SEGMENT 163                                       P1630890
C*****  WHEN EXECUTING ONLY SEGMENT 163, THE  STOP  AND  END  CARDS    P1630900
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE   C=                P1630910
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1630920
C=    STOP                                                              P1630930
C=    END                                                               P1630940
      STOP                                                              P163C1
      END                                                               P163C2
C***********************************************************************P4030010
C*****                                                                  P4030020
C*****                       IFI - (403)                                P4030030
C*****                                                                  P4030040
C***********************************************************************P4030050
C***** INTEGER FUNCTION OF DOUBLE PRECISION ARGUMENT(TEST 1)             P4030060
      FUNCTION IFI(AWVD)                                                P4030070
      DOUBLE PRECISION AWVD                                             P4030080
      IFI=AWVD                                                          P4030090
      RETURN                                                            P4030100
      END                                                               P4030110
C***********************************************************************P4230010
C*****                                                                  P4230020
C*****                       JFI - (423)                                P4230030
C*****                                                                  P4230040
C***********************************************************************P4230050
C*****INTEGER FUNCTION OF COMPLEX ARGUMENT(TEST 2)                       P4230060
      FUNCTION JFI(AWVC,BWVC)                                           P4230070
      COMPLEX AWVC,BWVC,CVC                                             P4230080
      CVC =AWVC*BWVC                                                    P4230090
      JFI=AIMAG(CVC)                                                    P4230100
      RETURN                                                            P4230110
      END                                                               P4230120
C***********************************************************************P4330010
C*****                                                                  P4330020
C*****                       KFI - (433)                                P4330030
C*****                                                                  P4330040
C***********************************************************************P4330050
C*****INTEGER FUNCTION OF LOGICAL ARGUMENT(TEST 3)                       P4330060
      FUNCTION KFI(AWVB)                                                P4330070
      LOGICAL AWVB                                                      P4330080
      IF (AWVB) GO TO 4331                                              P4330090
4330  IF (.NOT.AWVB) GO TO 4332                                         P4330100
      RETURN                                                            P4330110
4331  KFI = 2                                                           P4330120
      GO TO 4330                                                        P4330130
4332  KFI = 0                                                           P4330140
      RETURN                                                            P4330150
      END                                                               P4330160
C***********************************************************************P4430010
C*****                                                                  P4430020
C*****                       LFI - (443)                                P4430030
C*****                                                                  P4430040
C***********************************************************************P4430050
C*****INTEGER FUNCTION OF EXTERNAL PROCEDURE(TEST 4)                    P4430060
      FUNCTION LFI(BWVD,IWFI)                                           P4430070
      DOUBLE PRECISION BWVD                                             P4430080
      LFI=IWFI(BWVD)                                                    P4430090
      RETURN                                                            P4430100
      END                                                               P4430110
C***********************************************************************P4530010
C*****                                                                  P4530020
C*****                       MFI - (453)                                P4530030
C*****                                                                  P4530040
C***********************************************************************P4530050
C*****INTEGER FUNCTION OF DIFFERENT TYPES OF ARGUMENTS.USE IS MADE OF   P4530060
C***** ADJUSTABLE DIMENSION(TEST 5,6,7)                                 P4530070
      FUNCTION MFI(AWVS,IWVI,AWVB,AWVC,AWVD,AW1S,AW2S,AW3S,IW1I,IW2I,   P4530080
     1IW3I,AW1B,AW2B,AW3B,AW1C,AW2C,AW3C,AW1D,AW2D,AW3D,IWFI)           P4530090
      DOUBLE PRECISION AWVD,AW1D,AW2D,AW3D                              P4530100
      LOGICAL AWVB,AW1B,AW2B,AW3B                                       P4530110
      COMPLEX AWVC,AW1C,AW2C,AW3C                                       P4530120
      DIMENSION AW1S(IWVI),AW2S(IWVI,IWVI),AW3S(IWVI,IWVI,IWVI) ,       P4530130
     1          IW1I(IWVI),IW2I(IWVI,IWVI),IW3I(IWVI,IWVI,IWVI) ,       P4530140
     2          AW1B(IWVI),AW2B(IWVI,IWVI),AW3B(IWVI,IWVI,IWVI),        P4530150
     3          AW1C(IWVI),AW2C(IWVI,IWVI),AW3C(IWVI,IWVI,IWVI)   ,     P4530160
     4          AW1D(IWVI),AW2D(IWVI,IWVI),AW3D(IWVI,IWVI,IWVI)         P4530170
      COMMON BXVS                                                       P4530180
      MFI =AWVS**IWVI+AW1S(IWVI)**IW1I(IWVI)-AW2S(IWVI,IWVI)**IW2I      P4530190
     1 (IWVI,IWVI)+AW3S(IWVI,IWVI,IWVI)**IW3I(IWVI,IWVI,IWVI)-AWVD+     P4530200
     2 AW1D(IWVI)-AW2D(IWVI,IWVI)-AW3D(IWVI,IWVI,IWVI)+BXVS**IWFI(AWVD) P4530210
     3 -1.0                                                             P4530220
      AWVB=IWVI.EQ.1                                                    P4530230
      AW1B(IWVI) = IWVI .EQ. 1                                          P4530240
      AW2B(IWVI,IWVI) = IWVI.EQ.1                                       P4530250
      AW3B(IWVI,IWVI,IWVI) = IWVI.EQ.1                                  P4530260
      AWVC = AW1C(IWVI) +AW2C(IWVI,IWVI)+AW3C(IWVI,IWVI,IWVI)           P4530270
      RETURN                                                            P4530280
      END                                                               P4530290
C***********************************************************************P1640010
C*****                                                                  P1640020
C*****                        CFCCP-(164)                               P1640030
C*****                                                                  P1640040
C***********************************************************************P1640050
C*****                   GENERAL PURPOSE                         ASA REFP1640060
C*****    1.TO TEST COMPLEX FUNCTIONS IN FULL FORTRAN             8.3.1 P1640070
C*****    2.DUMMY ARGUMENTS ARE REAL,INTEGER,COMPLEX,LOGICAL,           P1640080
C*****    DOUBLE PRECISION,EXTERNAL PROCEDURE,ARRAY NAME.               P1640090
C*****    3.FUNCTIONS CONTAIN UP TO 20 ARGUMENTS                        P1640100
C*****    4.IN REFERENCE ACTUAL ARGUMENTS ARE VARIABLE NAME             P1640110
C*****    ARRAY NAME,ARRAY ELEMENT NAME,ARITHMETIC EXPRESSION           P1640120
C*****    EXTERNAL PROCEDURE                                            P1640130
C*****    6.USE CAN BE MADE OF ADJUSTABLE DIMENTION                     P1640140
C*****    7.ARGUMENTS CAN BE PASSED THROUGH COMMON                      P1640150
C*****RESTRICTIONS OBSERVED                                             P1640160
C*****    1.ITEMS(2),(3),(4),(5),(6) OF PARAGRAPH                       P1640170
C*****    2.LAST SENTENCE OF PARAGRAPH 3.2                              P1640180
C*****    THIS SEGMENT   USES   8 COMPLEX FUNCTIONS                     P1640190
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1640200
C*****     404, 414, 424, 434, 444, 454, 464                            P1640210
C*****    WHICH CONTAIN  ALL FUNCTIONS BEING TESTED HERE                P1640220
C*****                                                                  P1640230
C*****  S P E C I F I C A T I O N S  SEGMENT 164                        P1640240
C*****                                                                  P0013230
C*****  WHEN EXECUTING ONLY SEGMENT 164, THE SPECIFICATION STATEMENTS   P0013235
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013240
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C*****  IN COLUMNS 1  AND  2  REMOVED.                                  P0013245
C*****                                                                  P0013250
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P0013255
C=    INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P0013260
C=    LOGICAL AVB,A1B(2),A3B(2,2,2),A2B(2,2),BVB                        P0013265
C=    DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P0013270
C=    COMPLEX AFC,BFC,CFC,DFC,EFC,FFC,HFC,AVC,BVC                       P0013275
C=   1,A1C(12),A2C(2,2),A3C(2,2,1)                                      P0013280
C=    COMMON AXVS,CXVS                                                  P0013285
C=    EXTERNAL BFC                                                      P0013290
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P164A1
      INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P164A2
      LOGICAL AVB,A1B(2),A3B(2,2,2),A2B(2,2),BVB                        P164A3
      DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P164A4
      COMPLEX AFC,BFC,CFC,DFC,EFC,FFC,HFC,AVC,BVC                       P164A5
     1,A1C(12),A2C(2,2),A3C(2,2,1)                                      P164A6
      COMMON AXVS,CXVS                                                  P164A7
      EXTERNAL BFC                                                      P164A8
C*****                                                                  P0013295
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1640250
C*****                                                                  P0072680
C*****  WHEN EXECUTING ONLY SEGMENT 164, THE STATEMENT  NUVI = 6        P0072685
C*****  MUST HAVE THE C= IN COLUMNS  1  AND 2  REMOVED.                 P0072690
C*****                                                                  P0072695
C=    NUVI = 6                                                          P0072700
      NUVI = 6                                                          P164B1
C*****                                                                  P0072705
      WRITE(NUVI,1641)                                                  P1640260
 1641 FORMAT(1H1,1X,31HCFCCP - (164) COMPLEX FUNCTIONS//2X,             P1640270
     1 21HASA REFS. 8.3.1,8.3.2//2X, 7HRESULTS)                         P1640280
C***** TEST 1                                                           P1640290
      BVC=AFC(1.0)                                                      P1640300
      MAVI=1                                                            P1640310
      WRITE(NUVI,1642) BVC,MAVI                                         P1640320
1642  FORMAT(1H0,2F5.1,9H -- TEST ,I2,20H POSITIVE IF 0.0,0.0)          P1640330
C***** TEST 2                                                           P1640340
       MAVI=2                                                           P1640350
      BVC= BFC(1)-(1.0,1.0)                                             P1640360
      WRITE(NUVI,1642)BVC,MAVI                                          P1640370
C***** TEST 3                                                           P1640380
       MAVI=3                                                           P1640390
      A1S(1)=1.0                                                        P1640400
      A1S(2)=1.0                                                        P1640410
      BVC=CFC(A1S)                                                      P1640420
      WRITE(NUVI,1642)BVC,MAVI                                          P1640430
C***** TEST 4                                                           P1640440
      MAVI=4                                                            P1640450
      BVC = DFC (1.D0)                                                  P1640460
      WRITE(NUVI,1642)BVC,MAVI                                          P1640470
C*****TEST 5                                                            P1640480
      MAVI=5                                                            P1640490
      AVC=(1.0,1.0)                                                     P1640500
      BVC=EFC(AVC)                                                      P1640510
      WRITE(NUVI,1642)BVC,MAVI                                          P1640520
C*****TEST 6                                                            P1640530
      MAVI=6                                                            P1640540
      AVB=.TRUE.                                                        P1640550
      BVC=FFC(AVB)-(1.0,1.0)                                            P1640560
      WRITE(NUVI,1642)BVC,MAVI                                          P1640570
C***** TEST 7                                                           P1640580
       MAVI=7                                                           P1640590
       AVB=.FALSE.                                                      P1640600
       BVC=FFC(AVB)                                                     P1640610
       WRITE(NUVI,1642)BVC,MAVI                                         P1640620
C***** TEST 8,9,10                                                      P1640630
      IVI=1                                                             P1640640
      AVD=1.0D0                                                         P1640650
      A1D(1)=1.0D0                                                      P1640660
      A2D(1,1)=1.0D0                                                    P1640670
      A3D(1,1,1)=1.0D0                                                  P1640680
      AVS=1.0                                                           P1640690
      A1S(1)=1.0                                                        P1640700
      A2S(1,1)=1.0                                                      P1640710
      A3S(1,1,1)=1.0                                                    P1640720
      A1C(1)=(1.0,1.0)                                                  P1640730
      A2C(1,1)=(1.0,1.0)                                                P1640740
      A3C(1,1,1)=(1.0,1.0)                                              P1640750
      I1I(1)=1                                                          P1640760
      I2I(1,1)=1                                                        P1640770
      I3I(1,1,1)=1                                                      P1640780
      AVC = (0.0,0.0)                                                   P1640790
      BVC= HFC(AVS,IVI,AVB,AVC,AVD,A1S,A2S,A3S,I1I,I2I,I3I,A1B,A2B,A3B, P1640800
     1A1C,A2C,A3C,A1D,A2D,A3D,BFC)                                      P1640810
      MAVI = 8                                                          P1640820
      WRITE (NUVI,1642) BVC,MAVI                                        P1640830
      MAVI=9                                                            P1640840
      IF(AXVS) 1643,1644,1643                                           P1640850
 1648 MAVI = 10                                                         P1640860
      BVB=AVB.AND.A1B(1).AND.A2B(1,1).AND. A3B(1,1,1)                   P1640870
      IF (BVB) GO TO 1644                                               P1640880
 1643 WRITE(NUVI,1645)MAVI                                              P1640890
      GO TO 1647                                                        P1640900
 1644 WRITE(NUVI,1646)MAVI                                              P1640910
1645  FORMAT(/15X,5HTEST ,I2,12H IS NEGATIVE)                           P1640920
1646  FORMAT(/15X,5HTEST ,I2,12H IS POSITIVE)                           P1640930
1647  IF (MAVI  - 9) 1649,1648,1649                                     P1640940
1649  CONTINUE                                                          P1640950
C*****    END OF TEST SEGMENT 164                                       P1640960
C*****  WHEN EXECUTING ONLY SEGMENT 164, THE  STOP  AND  END  CARDS     P1640970
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1640980
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1640990
C=    STOP                                                              P1641000
C=    END                                                               P1641010
      STOP                                                              P164C1
      END                                                               P164C2
C***********************************************************************P4040010
C*****                                                                  P4040020
C*****                      AFC - (404)                                 P4040030
C*****                                                                  P4040040
C***********************************************************************P4040050
C*****COMPLEX FUNCTION OF REAL ARGUMENT (TEST 1)                        P4040060
      COMPLEX FUNCTION AFC(AWVS)                                        P4040070
      AFC = (-1.0,0.0)+AWVS                                             P4040080
      RETURN                                                            P4040090
      END                                                               P4040100
C***********************************************************************P4140010
C*****                                                                  P4140020
C*****                      BFC - (414)                                 P4140030
C*****                                                                  P4140040
C***********************************************************************P4140050
C*****COMPLEX FUNCTION OF INTEGER ARGUMENT (TEST 2)                     P4140060
      COMPLEX FUNCTION BFC(IWVI)                                        P4140070
      BFC=(1.0,1.0)**IWVI                                               P4140080
      RETURN                                                            P4140090
      END                                                               P4140100
C***********************************************************************P4240010
C*****                                                                  P4240020
C*****                      CFC - (424)                                 P4240030
C*****                                                                  P4240040
C***********************************************************************P4240050
C*****COMPLEX FUNCTION OF ARRAY NAME (TEST 3)                           P4240060
      COMPLEX FUNCTION CFC(AW1S)                                        P4240070
      DIMENSION AW1S(2)                                                 P4240080
      CFC = (2.0,0.0)-AW1S(1)-AW1S(2)                                   P4240090
      RETURN                                                            P4240100
      END                                                               P4240110
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C***********************************************************************P4340010
C*****                                                                  P4340020
C*****                       DFC - (434)                                P4340030
C*****                                                                  P4340040
C***********************************************************************P4340050
C*****COMPLEX FUNCTION OF DOUBLE PRECISION ARGUMENT (TEST 4)            P4340060
      COMPLEX FUNCTION DFC(AWVD)                                        P4340070
      DOUBLE PRECISION AWVD                                             P4340080
      AVS  = AWVD                                                       P4340090
      DFC = (1.0,1.0) * AVS - (1.0,1.0)                                 P4340100
      RETURN                                                            P4340110
      END                                                               P4340120
C***********************************************************************P4440010
C*****                                                                  P4440020
C*****                       EFC - (444)                                P4440030
C*****                                                                  P4440040
C***********************************************************************P4440050
C*****COMPLEX FUNCTION OF COMPLEX ARGUMENT (TEST 5)                     P4440060
      COMPLEX FUNCTION EFC(AWVC)                                        P4440070
      COMPLEX AWVC                                                      P4440080
      EFC=AWVC- (1.0,1.0)                                               P4440090
      RETURN                                                            P4440100
      END                                                               P4440110
C***********************************************************************P4540010
C*****                                                                  P4540020
C*****                       FFC - (454)                                P4540030
C*****                                                                  P4540040
C*****COMPLEX FUNCTION OF LOGICAL ARGUMENT(TESTS 6,7)                   P4540050
      COMPLEX FUNCTION FFC(AWVB)                                        P4540060
      LOGICAL AWVB                                                      P4540070
      IF (AWVB) GO TO 4541                                              P4540080
4540  IF (.NOT.AWVB) GO TO 4542                                         P4540090
      RETURN                                                            P4540100
4541  FFC = (1.0,1.0)                                                   P4540110
      GO TO 4540                                                        P4540120
4542  FFC = (0.0,0.0)                                                   P4540130
      RETURN                                                            P4540140
      END                                                               P4540150
C***********************************************************************P4640010
C*****                                                                  P4640020
C*****                       HFC - (464)                                P4640030
C*****                                                                  P4640040
C***********************************************************************P4640050
C*****COMPLEX FUNCTION OF DIFFERENT TYPES OF ARGUMENTS (TESTS 8,9,10    P4640060
      COMPLEX FUNCTION  HFC(AWVS,IWVI,AWVB,AWVC,AWVD,AW1S,AW2S,AW3S,    P4640070
     1 IW1I,IW2I,IW3I,AW1B,AW2B,AW3B,AW1C,AW2C,AW3C,AW1D,AW2D,AW3D,AWFC)P4640080
       DIMENSION AW1S(IWVI),AW2S(IWVI,IWVI),AW3S(IWVI,IWVI,IWVI),       P4640090
     1           IW1I(IWVI),IW2I(IWVI,IWVI),IW3I(IWVI,IWVI,IWVI),       P4640100
     2           AW1B(IWVI),AW2B(IWVI,IWVI),AW3B(IWVI,IWVI,IWVI),       P4640110
     3           AW1C(IWVI),AW2C(IWVI,IWVI),AW3C(IWVI,IWVI,IWVI),       P4640120
     4           AW1D(IWVI),AW2D(IWVI,IWVI),AW3D(IWVI,IWVI,IWVI)        P4640130
      COMMON BXVS                                                       P4640140
      LOGICAL AWVB,AW1B,AW2B,AW3B                                       P4640150
      COMPLEX AWVC,AW1C,AW2C,AW3C, AWFC                                 P4640160
      DOUBLE PRECISION AWVD,AW1D,AW2D,AW3D                              P4640170
      HFC = AWVC                                                        P4640180
      BXVS=AWVS**IWVI+AW1S(IWVI)**IW1I(IWVI)-AW2S(IWVI,IWVI)**IW2I      P4640190
     1 (IWVI,IWVI)+AW3S(IWVI,IWVI,IWVI)**IW3I(IWVI,IWVI,IWVI)-AWVD+     P4640200
     2 AW1D(IWVI)-AW2D(IWVI,IWVI)-AW3D(IWVI,IWVI,IWVI)                  P4640210
      AWVB = IWVI.EQ.1                                                  P4640220
      AW1B(IWVI) = IWVI.EQ.1                                            P4640230
      AW2B(IWVI,IWVI) = IWVI .EQ. 1                                     P4640240
      AW3B(IWVI,IWVI,IWVI) = IWVI.EQ.1                                  P4640250
      RETURN                                                            P4640260
C*****    END OF TEST SEGMENT 464                                       P4640270
      END                                                               P4640280
C***********************************************************************P1650010
C*****                                                                  P1650020
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C*****                             DPFCP-(165)                          P1650030
C*****                                                                  P1650040
C***********************************************************************P1650050
C*****                         GENERAL PURPOSE                          P1650060
C*****    1.TO TEST DOUBLE PRECISION FUNCTIONS IN FULL FORTRAN     8.3.1P1650070
C*****    2.DUMMY ARGUMENTS ARE REAL,INTEGER,COMPLEX,LOGICAL,           P1650080
C*****    DOUBLE PRECISION,EXTERNAL PROCEDURE,ARRAY NAME                P1650090
C*****    3.FUNCTIONS CONTAIN UP TO 20 ARGUMENTS                        P1650100
C*****    4.IN REFERENCE,ACTUAL ARGUMENTS ARE VARIABLE1NAME,            P1650110
C*****     ARRAY NAME,ARRAY ELEMENT NAME,OR ARITHMETIC EXPRESSION. 8.3.2P1650120
C*****RESTRICTIONS OBSERVED                                             P1650130
C*****    1.ITEMS(2),(3),(4),(5),(6) OF PARAGRAPH 8.3.1                 P1650140
C*****    2 LAST SENTENCE  OF PARAGRAPH 3.2                             P1650150
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1650160
C*****     405, 415, 425, 435, 445, 455, 465, 475                       P1650170
C*****     WHICH CONTAINS ALL FUNCTIONS BEING TESTED HERE.              P1650180
C*****                                                                  P1650190
C*****  S P E C I F I C A T I O N S  SEGMENT 165                        P1650200
C*****                                                                  P0013300
C*****  WHEN EXECUTING ONLY SEGMENT 165, THE SPECIFICATION STATEMENTS   P0013305
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013310
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013315
C*****                                                                  P0013320
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P0013325
C=    INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P0013330
C=    LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB                        P0013335
C=    DOUBLE PRECISION AFD, BFD, CFD, DFD, EFD, FFD, GFD, HFD,AVD       P0013340
C=   1, A1D(4),A2D(2,2),A3D(2,2,2)                                      P0013345
C=    COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P0013350
C=    COMMON AXVS,CXVS                                                  P0013355
C=     EXTERNAL  CFD,AFD                                                P0013360
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P165A1
      INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P165A2
      LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB,BVB                        P165A3
      DOUBLE PRECISION AFD, BFD, CFD, DFD, EFD, FFD, GFD, HFD,AVD       P165A4
     1, A1D(4),A2D(2,2),A3D(2,2,2)                                      P165A5
      COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P165A6
      COMMON AXVS,CXVS                                                  P165A7
       EXTERNAL  CFD,AFD                                                P165A8
C*****                                                                  P0013365
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1650210
C*****  WHEN EXECUTING ONLY SEGMENT 165, THE FOLLOWING STATEMENT        P0072710
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072715
C*****                                                                  P0072720
C=    NUVI = 6                                                          P0072725
      NUVI = 6                                                          P165B1
      WRITE (NUVI,1650)                                                 P1650220
 1650 FORMAT(1H1,1X,30HDPFCP - (165) DOUBLE PRECISION/ 16X, 9HFUNCTIONS P1650230
     1 //2X,21HASA REFS. 8.3.1,8.3.2//2X, 7HRESULTS)                    P1650240
C***** TEST 1                                                           P1650250
      MAVI = 1                                                          P1650260
      IVI = AFD(1.0) - 1.0D0                                            P1650270
       IF (IVI)  1652,1653,1652                                         P1650280
C***** TEST 2                                                           P1650290
 1657 MAVI =2                                                           P1650300
      IVI=BFD(1)-1.0D0                                                  P1650310
      IF(IVI)1652,1653,1652                                             P1650320
C***** TEST 3                                                           P1650330
 1658 MAVI =3                                                           P1650340
       AVD=1.0D0                                                        P1650350
      IVI=CFD(AVD)-1.0D0                                                P1650360
       IF(IVI) 1652,1653,1652                                           P1650370
C***** TEST 4 .ONE ARGUMENT IS ARRAY ELEMENT NAME                       P1650380
 1659 MAVI =4                                                           P1650390
      AVC = (1.0,1.0)                                                   P1650400
      A1C(1)=(1.0,-1.0)                                                 P1650410
      IVI=DFD(AVC,A1C(1))                                               P1650420
      IF (IVI) 1652,1653,1652                                           P1650430
```

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C***** TEST 5,6                                                         P1650440
 7014 MAVI =5                                                           P1650450
      AVB=.TRUE.                                                        P1650460
      IVI=EFO(AVB)-1.0D0                                                P1650470
      IF(IVI)1652,1653,1652                                             P1650480
 7015 MAVI = 6                                                          P1650490
      AVB=.FALSE.                                                       P1650500
      IVI=EFD(AVB)                                                      P1650510
      IF(IVI)1652,1653,1652                                             P1650520
C***** TEST 7                                                           P1650530
 7016 MAVI = 7                                                          P1650540
      IVI = FFD (1.E0,AFD) - 1.0D0                                      P1650550
      IF (IVI) 1652,1653,1652                                           P1650560
C***** TEST 8                                                           P1650570
 7017 MAVI = 8                                                          P1650580
      A1D(1)=1.0D0                                                      P1650590
      A1D(2)=-1.0D0                                                     P1650600
      IVI=GFO(A1O)                                                      P1650610
      IF (IVI) 1652,1653,1652                                           P1650620
C***** TESTS 9,10,11,12                                                 P1650630
 7018 IAVI = 1                                                          P1650640
      AVD=1.0D0                                                         P1650650
      A1D(1)=1.0D0                                                      P1650660
      A2O(1,1)=1.0D0                                                    P1650670
      A3O(1,1,1)= 1.0D0                                                 P1650680
      AVS=1.0                                                           P1650690
      A1S(1)=1.0                                                        P1650700
      A2S(1,1)=1.0                                                      P1650710
      A3S(1,1,1)=1.0                                                    P1650720
      A1C(1)=(1.0,1.0)                                                  P1650730
      A2C(1,1)=(1.0,1.0)                                                P1650740
      A3C(1,1,1)=(1.0,1.0)                                              P1650750
      I1I(1)=1                                                          P1650760
      I2I(1,1)=1                                                        P1650770
      I3I(1,1,1)=1                                                      P1650780
      MAVI = 9                                                          P1650790
      IVI=HFO(AVS,IAVI,AVB,AVC,AVO,A1S,A2S,A3S,I1I,I2I,I3I ,A1B,A2B,A3B,P1650800
     1A1C,A2C,A3C,A1O,A2O,A3D,CFD)                                      P1650810
      IF (IVI)   1652,1653,1652                                         P1650820
 7019 MAVI = 10                                                         P1650830
      IVI=AXVS                                                          P1650840
      IF (IVI) 1652,1653,1652                                           P1650850
 7020 MAVI = 11                                                         P1650860
      WRITE (NUVI,1656) AVC,MAVI                                        P1650870
1656  FORMAT(//2F5.1//2X,5HTEST ,I2,31H IS POSITIVE IF NUMBERS PRINTEO/ P1650880
     1 2X,17HABOVE ARE 0.0,0.0)                                         P1650890
 7021 MAVI = 12                                                         P1650900
      BVB = AVB.ANO.A1B(1).ANO.A2B(1,1).AND.A3B(1,1,1)                  P1650910
      IF(BVB) GO TO 1653                                                P1650920
 1652 WRITE(NUVI,1654)MAVI                                              P1650930
      GO TO 1651                                                        P1650940
 1653 WRITE(NUVI,1655)MAVI                                              P1650950
 1654 FORMAT(/2X,5HTEST ,I2,12H IS NEGATIVE)                            P1650960
 1655 FORMAT(/2X,5HTEST ,I2,12H IS POSITIVE)                            P1650970
 1651 GO TO (1657,1658,1659,7014,7015,7016,7017,7018,7019,7020,7021,   P1650980
     1 7022) ,MAVI                                                      P1650990
 7022 CONTINUE                                                          P1651000
C*****     END OF TEST SEGMENT 165                                      P1651010
C*****  WHEN EXECUTING ONLY SEGMENT 165, THE  STOP  AND  END CAROS      P1651020
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1651030
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1651040
C=    STOP                                                              P1651050
C=    END                                                               P1651060
      STOP                                                              P165C1
      ENO                                                               P165C2
C***********************************************************************P4050010
C*****                                                                  P4050020
C*****                              AFO - (405)                         P4050030
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C*****                                                                  P4050040
C***********************************************************************P4050050
C*****DOUBLE PRECISION FUNCTION OF REAL ARGUMENT (TEST 1)               P4050060
      DOUBLE PRECISION FUNCTION  AFD(AWVS)                              P4050070
      AFD=AWVS                                                          P4050080
      RETURN                                                            P4050090
      END                                                               P4050100
C***********************************************************************P4150010
C*****                                                                  P4150020
C*****                       BFD -(415)                                 P4150030
C*****                                                                  P4150040
C***********************************************************************P4150050
C*****DOUBLE PRECISION FUNCTION OF INTEGER ARGUMENT(TEST2)              P4150060
      DOUBLE PRECISION FUNCTION BFD(IWVI)                               P4150070
      BFD=1.0D0**IWVI                                                   P4150080
      RETURN                                                            P4150090
      END                                                               P4150100
C***********************************************************************P4250010
C*****                                                                  P4250020
C*****                       CFD - (425)                                P4250030
C*****                                                                  P4250040
C***********************************************************************P4250050
C*****DOUBLE PRECISION FUNCTION OF DOUBLE PRECISION ARGUMENT(TEST 3)    P4250060
      DOUBLE PRECISION FUNCTION CFD(AWVD)                               P4250070
      DOUBLE PRECISION AWVD                                             P4250080
      CFD=AWVD                                                          P4250090
      RETURN                                                            P4250100
      END                                                               P4250110
C***********************************************************************P4350010
C*****                                                                  P4350020
C*****                       DFD -(435)                                 P4350030
C*****                                                                  P4350040
C***********************************************************************P4350050
C*****DOUBLE PRECISION FUNCTION OF COMPLEX ARGUMENT(TEST 4)             P4350060
      DOUBLE PRECISION FUNCTION DFD(AWVC,BWVC)                          P4350070
      COMPLEX AWVC,BWVC,CVC                                             P4350080
      CVC =BWVC*AWVC                                                    P4350090
      DFD=AIMAG(CVC)                                                    P4350100
      RETURN                                                            P4350110
      END                                                               P4350120
C***********************************************************************P4450010
C*****                                                                  P4450020
C*****                       EFD - (445)                                P4450030
C*****                                                                  P4450040
C***********************************************************************P4450050
C*****DOUBLE PRECISION FUNCTION OF LOGICAL ARGUMENT(TEST 5,6)           P4450060
      DOUBLE PRECISION FUNCTION EFD(AWVB)                               P4450070
      LOGICAL AWVB                                                      P4450080
      IF(AWVB) GO TO 4451                                               P4450090
4450  IF(.NOT.AWVB) GO TO 4452                                          P4450100
      RETURN                                                            P4450110
4451  EFD = 1.0D0                                                       P4450120
      GO TO 4450                                                        P4450130
4452  EFD = 0.0D0                                                       P4450140
      RETURN                                                            P4450150
      END                                                               P4450160
C***********************************************************************P4550010
C*****                                                                  P4550020
C*****                       FFD - (455)                                P4550030
C*****                                                                  P4550040
C***********************************************************************P4550050
C*****DOUBLE PRECISION FUNCTION OF EXTERNAL PROCEDURE (TEST 7)          P4550060
      DOUBLE PRECISION FUNCTION FFD(BWVS,BWFD)                          P4550070
      DOUBLE PRECISION      BWFD                                        P4550080
      FFD = BWFD (BWVS)                                                 P4550090
      RETURN                                                            P4550100
      END                                                               P4550110
C***********************************************************************P4650010
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C*****                                                                  P4650020
C*****                       GFO - (465)                                P4650030
C*****                                                                  P4650040
C***********************************************************************P4650050
C*****DOUBLE PRECISION FUNCTION OF  ARRAY NAME (TEST 8)                  P4650060
      DOUBLE PRECISION FUNCTION GFD(AW1D)                               P4650070
      OIMENSION AW10(2)                                                 P4650080
      OOUBLE PRECISION AW10                                             P4650090
      GFO= AW10(1)+AW1D(2)                                              P4650100
      RETURN                                                            P4650110
      END                                                               P4650120
C***********************************************************************P4750010
C*****                                                                  P4750020
C*****                       HFD - (475)                                P4750030
C*****                                                                  P4750040
C***********************************************************************P4750050
C*****DOUBLE PRECISION FUNCTION OF OIFFERENT TYPES OF ARGUMENTS.USE CAN  P4750060
C*****BE MAOE OF AOJUSTABLE OIMENSION.SOME ARGUMENTS CAN BE PASSEO       P4750070
C*****THROUGH A COMMON STATEMENT.                                        P4750080
      OOUBLE PRECISION FUNCTION HFO(AWVS,IWVI,AWVB,AWVC,AWVO,AW1S,AW2S, P4750090
     1 AW3S,IW1I,IW2I,IW3I,AW1B,AW2B,AW3B,AW1C,AW2C,AW3C,AW1D,AW2D,     P4750100
     2 AW30,CWFO)                                                       P4750110
       DIMENSION  AW1S(IWVI),AW2S(IWVI,IWVI),AW3S(IWVI,IWVI,IWVI),      P4750120
     1            IW1I(IWVI),IW2I(IWVI,IWVI),IW3I(IWVI,IWVI,IWVI),      P4750130
     2            AW1C(IWVI),AW2C(IWVI,IWVI),AW3C(IWVI,IWVI,IWVI),      P4750140
     3            AW1O(IWVI),AW2D(IWVI,IWVI),AW3D(IWVI,IWVI,IWVI),      P4750150
     4            AW1B(IWVI),AW2B(IWVI,IWVI),AW3B(IWVI,IWVI,IWVI)       P4750160
      DOUBLE PRECISION  AWVO,AW1D,AW2D,AW3D, CWFD                       P4750170
      COMPLEX AWVC,AW1C,AW2C,AW3C                                       P4750180
      REAL AW1S, AW2S, AW3S                                             P4750190
      LOGICAL  AWVB,AW1B,AW2B,AW3B                                      P4750200
      COMMON BXVS                                                       P4750210
      HFD = AWVO - AW1D(IWVI)+AW2D(IWVI,IWVI)-AW3D(IWVI,IWVI,IWVI)      P4750220
     1 + CWFO(AWVO) - 1.0D0                                             P4750230
      AWVC=AW1C(IWVI)+AW2C(IWVI,IWVI)-AW3C(IWVI,IWVI,IWVI)-(1.0,1.0)    P4750240
      BXVS=AWVS**IWVI-AW1S(IWVI)**IW1I(IWVI)+AW2S(IWVI,IWVI)**IW2I      P4750250
     1  (IWVI,IWVI)-AW3S(IWVI,IWVI,IWVI)**IW3I(IWVI,IWVI,IWVI)          P4750260
       AWVB=IWVI.EQ.1                                                   P4750270
      AW1B(IWVI)=IWVI.EQ.1                                              P4750280
      AW2B(IWVI,IWVI)=IWVI.EQ.1                                         P4750290
      AW3B(IWVI,IWVI,IWVI)=IWVI.EQ.1                                    P4750300
      RETURN                                                            P4750310
      END                                                               P4750320
C***********************************************************************P1660010
C*****                                                                  P1660020
C*****                      BFCCP-(166)                                 P1660030
C*****                                                                  P1660040
C***********************************************************************P1660050
C*****                     GENERAL PURPOSE                              P1660060
C*****    1.TO TEST LOGICAL FUNCTIONS IN FULL FORTRAN                   P1660070
C*****    2.DUMMY ARGUMENTS ARE REAL,INTEGER,COMPLEX,LOGICAL,           P1660080
C*****    OOUBLE PRECISION,EXTERNAL PROCEOURE,ARRAY NAME.               P1660090
C*****    3.FUNCTIONS CONTAIN UP TO 20 ARGUMENTS                        P1660100
C*****    4.IN REFERENCE ACTUAL ARGUMENTS ARE VARIABLE NAME             P1660110
C*****    ARRAY NAME,ARRAY ELEMENT NAME,ARITHMETIC EXPRESSION           P1660120
C*****    EXTERNAL PROCEDURE                                            P1660130
C*****    6.USE CAN BE MAOE OF AOJUSTABLE OIMENTION                     P1660140
C*****    7.ARGUMENTS CAN BE PASSEO THROUGH COMMON                      P1660150
C*****RESTRICTIONS OBSERVEO                                             P1660160
C*****    1.ITEMS(2),(3),(4),(5),(6) OF PARAGRAPH                       P1660170
C*****    2.LAST SENTENCE OF PARAGRAPH 3.2                              P1660180
C*****     THIS SEGMENT IS TO BE RUN WITH SEGMENTS                      P1660190
C*****     406, 416, 426, 436, 446, 456, 466, 476          WHICH        P1660200
C*****    CONTAINS ALL FUNCTIONS BEING TESTED HERE.                     P1660210
C*****LOGICAL FUNCTION OF REAL ARGUMENT(TEST 1)                         P1660220
C*****                                                                  P1660230
C*****  S P E C I F I C A T I O N S  SEGMENT 166                        P1660240
C*****                                                                  P0013370
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C*****  WHEN EXECUTING ONLY SEGMENT 166, THE SPECIFICATION STATEMENTS  P0013375
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C=                       P0013380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013385
C*****                                                                  P0013390
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P0013395
C=    INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P0013400
C=    LOGICAL AVB,AFB,BFB,CFB,DFB,EFB,FFB,GFB,HFB                       P0013405
C=   1, A1B(2),A2B(2,2),A3B(2,2,2)                                      P0013410
C=    DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P0013415
C=    COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P0013420
C=    COMMON AXVS,CXVS                                                  P0013425
C=     EXTERNAL AFB                                                     P0013430
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3)                              P166A1
      INTEGER I1I(5),I2I(2,2),I3I(2,2,2)                                P166A2
      LOGICAL AVB,AFB,BFB,CFB,DFB,EFB,FFB,GFB,HFB                       P166A3
     1, A1B(2),A2B(2,2),A3B(2,2,2)                                      P166A4
      DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P166A5
      COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P166A6
      COMMON AXVS,CXVS                                                  P166A7
       EXTERNAL AFB                                                     P166A8
C*****                                                                  P0013435
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1660250
C*****                                                                  P0072730
C*****  WHEN EXECUTING ONLY SEGMENT 166, THE FOLLOWING STATEMENT        P0072735
C*****  NUVI  =  6  MUST HAVE THE C= IN COLUMNS 1  AND  2  REMOVED.     P0072740
C=    NUVI = 6                                                          P0072745
      NUVI = 6                                                          P166B1
      MAVI=1                                                            P1660260
      WRITE(NUVI,1662)                                                  P1660270
 1662 FORMAT(1H1,1X,31HBFCCP - (166) LOGICAL FUNCTIONS//2X,             P1660280
     1 13HASA REF 8.3.1//2X,7HRESULTS)                                  P1660290
      AVB=AFB(1.0)                                                      P1660300
      IF (AVB) GO TO 1664                                               P1660310
      WRITE(NUVI,1661) MAVI                                             P1660320
      GO TO 1665                                                        P1660330
1660  FORMAT (/7H  TEST ,I2,12H IS POSITIVE)                            P1660340
1661  FORMAT (/7H  TEST ,I2,12H IS NEGATIVE)                            P1660350
1664  WRITE(NUVI,1660) MAVI                                             P1660360
      GO TO (1665,1666,1667,1668,1669,7030,7031,7032,7033,7034), MAVI   P1660370
C***** LOGICAL FUNCTION OF INTEGER ARGUMENT (TEST 2)                    P1660380
1665  MAVI=2                                                            P1660390
      AVB=BFB(1)                                                        P1660400
      IF (AVB) GO TO 1664                                               P1660410
      WRITE(NUVI,1661) MAVI                                             P1660420
C*****LOGICAL FUNCTION OF DOUBLE PRECISION ARGUMENT(TEST 3)              P1660430
1666  MAVI=3                                                            P1660440
      AVD=1.0D0                                                         P1660450
      AVB=CFB(AVD)                                                      P1660460
      IF (AVB) GO TO 1664                                               P1660470
      WRITE(NUVI,1661) MAVI                                             P1660480
C***** LOGICAL FUNCTION OF LOGICAL ARGUMENT(TEST 4)                      P1660490
1667  MAVI=4                                                            P1660500
      AVB=DFB(.TRUE.)                                                   P1660510
      IF (AVB) GO TO 1664                                               P1660520
      WRITE(NUVI,1661) MAVI                                             P1660530
C*****LOGICAL FUNCTION OF COMPLEX ARGUMENT(TEST 5)                       P1660540
1668  MAVI=5                                                            P1660550
      AVB=EFB((1.0,1.0))                                                P1660560
      IF (AVB) GO TO 1664                                               P1660570
      WRITE(NUVI,1661) MAVI                                             P1660580
C***** LOGICAL FUNCTION OF ARRAY NAME (TEST 6)                          P1660590
1669   MAVI=6                                                           P1660600
       A1S(1)=1.0                                                       P1660610
       A1S(2)=0.0                                                       P1660620
       AVB=FFB(A1S)                                                     P1660630
      IF (AVB) GO TO 1664                                               P1660640
      WRITE(NUVI,1661) MAVI                                             P1660650
C***** LOGICAL FUNCTION OF EXTERNAL PROCEDURE(TEST 7)                    P1660660
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7030   MAVI=7                                                           P1660670
      AVB= GFB(AFB,1.0)                                                 P1660680
      IF (AVB) GO TO 1664                                               P1660690
      WRITE(NUVI,1661) MAVI                                             P1660700
C*****LOGICAL FUNCTION OF DIFFERENT TYPES OF ARGUMENTS                  P1660710
7031  MAVI=8                                                            P1660720
      AVD = 1.0D0                                                       P1660730
      AVC = (1.0,1.0)                                                   P1660740
      IAVI = 1                                                          P1660750
      AVB=.TRUE.                                                        P1660760
      A1B(1)=.TRUE.                                                     P1660770
      A2B(1,1)=.TRUE.                                                   P1660780
      A3B(1,1,1)=.TRUE.                                                 P1660790
      A1C(1)=(1.0,1.0)                                                  P1660800
      A2C(1,1)=(1.0,1.0)                                                P1660810
      A3C(1,1,1)=(-2.0,-2.0)                                            P1660820
      A1D(1)=1.0D0                                                      P1660830
      A2D(1,1)=1.0D0                                                    P1660840
      A3D(1,1,1)=-2.0D0                                                 P1660850
      I1I(1)=1                                                          P1660860
      I2I(1,1)=1                                                        P1660870
      I3I(1,1,1)=1                                                      P1660880
      A1S(1)=1.0                                                        P1660890
      A2S(1,1)=1.0                                                      P1660900
      A3S(1,1,1)=1.0                                                    P1660910
      AXVS=1.0                                                          P1660920
      AVB= HFB(AVS,IAVI,AVB,AVD,AVC,A1S,A2S,A3S,I1I,I2I,I3I,A1B,A2B,    P1660930
     1A3B,A1C,A2C,A3C,A1D,A2D,A3D,AFB)                                  P1660940
      IF (AVB) GO TO 1664                                               P1660950
      WRITE(NUVI,1661) MAVI                                             P1660960
7032  MAVI = 9                                                          P1660970
      IAVI=AVD                                                          P1660980
      IF(IAVI.EQ.0) GO TO 1664                                          P1660990
      WRITE(NUVI,1661) MAVI                                             P1661000
7033  IAVI=1                                                            P1661010
      MAVI=10                                                           P1661020
      IAVI=AVS                                                          P1661030
      IF(IAVI.EQ.0) GO TO 1664                                          P1661040
      WRITE(NUVI,1661) MAVI                                             P1661050
7034  MAVI=11                                                           P1661060
      WRITE(NUVI,1663) AVC,MAVI                                         P1661070
1663  FORMAT (//2F8.4//7H  TEST ,I2,31H IS POSITIVE IF NUMBERS PRINTED/ P1661080
     119H  ABOVE ARE 0.0,0.0//2X,12HEND OF (166))                       P1661090
C*****    END OF TEST SEGMENT 166                                       P1661100
C*****  WHEN EXECUTING ONLY SEGMENT 166, THE STOP AND END CARDS         P1661110
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C= IN               P1661120
C***** COLUMNS  1  AND  2  REMOVED.                                     P1661130
C=    STOP                                                              P1661140
C=    END                                                               P1661150
      STOP                                                              P166C1
      END                                                               P166C2
C***********************************************************************P4060010
C*****                                                                  P4060020
C*****                       AFB - (406)                                P4060030
C*****                                                                  P4060040
C***********************************************************************P4060050
C*****LOGICAL FUNCTION OF REAL ARGUMENT (TEST 1)                        P4060060
      LOGICAL FUNCTION AFB(AWVS)                                        P4060070
      AFB= AWVS.GT.0.0                                                  P4060080
      RETURN                                                            P4060090
      END                                                               P4060100
C***********************************************************************P4160010
C*****                                                                  P4160020
C*****                       BFB - (416)                                P4160030
C*****                                                                  P4160040
C***********************************************************************P4160050
C*****LOGICAL FUNCTION OF INTEGER ARGUMENT (TEST 2)                     P4160060
      LOGICAL FUNCTION BFB(IWVI)                                        P4160070
      BFB= IWVI.GT.0                                                    P4160080
      RETURN                                                            P4160090
      END                                                               P4160100
C***********************************************************************P4260010
C*****                                                                  P4260020
C*****                       CFB - (426)                                P4260030
C*****                                                                  P4260040
C***********************************************************************P4260050
C*****LOGICAL FUNCTION OF DOUBLE PRECISION ARGUMENT(TEST 3)             P4260060
      LOGICAL FUNCTION CFB(AWVD)                                        P4260070
      DOUBLE PRECISION AWVD                                             P4260080
      CFB= AWVD.GT.0.0D0                                                P4260090
      RETURN                                                            P4260100
      END                                                               P4260110
C***********************************************************************P4360010
C*****                                                                  P4360020
C*****                       DFB - (436)                                P4360030
C*****                                                                  P4360040
C***********************************************************************P4360050
C*****LOGICAL FUNCTION OF LOGICAL ARGUMENT (TEST 4)                     P4360060
      LOGICAL FUNCTION DFB(AWVB)                                        P4360070
      LOGICAL AWVB                                                      P4360080
      DFB=AWVB                                                          P4360090
      RETURN                                                            P4360100
      END                                                               P4360110
C***********************************************************************P4460010
C*****                                                                  P4460020
C*****                       EFB - (446)                                P4460030
C*****                                                                  P4460040
C***********************************************************************P4460050
C*****LOGICAL FUNCTION OF COMPLEX ARGUMENT (TEST 5)                     P4460060
      LOGICAL FUNCTION EFB(AWVC)                                        P4460070
      COMPLEX AWVC                                                      P4460080
      AVS =AIMAG(AWVC)                                                  P4460090
      EFB = AVS .GT.0.0                                                 P4460100
      RETURN                                                            P4460110
      END                                                               P4460120
C***********************************************************************P4560010
C*****                                                                  P4560020
C*****                       FFB - (456)                                P4560030
C*****                                                                  P4560040
C***********************************************************************P4560050
C*****LOGICAL FUNCTION OF ARRAY NAME (TEST 6)                           P4560060
      LOGICAL FUNCTION FFB(AW1S)                                        P4560070
      DIMENSION AW1S(2)                                                 P4560080
      BVS =AW1S(1)+AW1S(2)                                              P4560090
      FFB= BVS .GT.0.0                                                  P4560100
      RETURN                                                            P4560110
      END                                                               P4560120
C***********************************************************************P4660010
C*****                                                                  P4660020
C*****                       GFB - (466)                                P4660030
C*****                                                                  P4660040
C***********************************************************************P4660050
C*****LOGICAL FUNCTION OF EXTERNAL PROCEDURE (TEST 7)                   P4660060
      LOGICAL FUNCTION  GFB(AWFB,AWVS)                                  P4660070
      LOGICAL AWFB                                                      P4660080
      GFB= AWFB(AWVS)                                                   P4660090
      RETURN                                                            P4660100
      END                                                               P4660110
C***********************************************************************P4760010
C*****                                                                  P4760020
C*****                       HFB - (476)                                P4760030
C*****                                                                  P4760040
C***********************************************************************P4760050
C*****LOGICAL FUNCTION OF DIFFERENT TYPES OF ARGUMENTS(TEST 8,9,10,11)  P4760060
      LOGICAL FUNCTION HFB(AWVS,IWVI,AWVB,AWVD,AWVC,AW1S,AW2S,AW3S,     P4760070
     1IW1I,IW2I,IW3I,AW1B,AW2B,AW3B,AW1C,AW2C,AW3C,AW1D,AW2D,AW3D,AWFB) P4760080
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      COMMON BXVS                                                       P4760090
      COMPLEX AWVC,AW1C,AW2C,AW3C                                       P4760100
      DOUBLE PRECISION AWVD,AW1D,AW3D, AW2D                             P4760110
      LOGICAL AWVB,AW1B,AW2B,AW3B,AWFB                                  P4760120
      DIMENSION   AW1C(IWVI),AW2C(IWVI,2),AW3C(IWVI,2,2),               P4760130
     1            AW1B(IWVI),AW2B(IWVI,2),AW3B(IWVI,2,2)       ,        P4760140
     2            AW1S(IWVI),AW2S(IWVI,2),AW3S(IWVI,2,2)       ,        P4760150
     3            AW1D(IWVI),AW2D(IWVI,2),AW3D(IWVI,2,2)       ,        P4760160
     4            IW1I(IWVI),IW2I(IWVI,2),IW3I(IWVI,2,2)                P4760170
      HFB = AWVB.AND.AW1B(IWVI).AND.AW2B(IWVI,IWVI).AND.AW3B(IWVI,      P4760180
     1 IWVI,IWVI).AND.AWFB(1.0)                                         P4760190
      AWVC=AW1C(IWVI)+AW2C(IWVI,IWVI)+AW3C(IWVI,IWVI,IWVI)              P4760200
      AWVD=AW1D(IWVI)+AW2D(IWVI,IWVI)+AW3D(IWVI,IWVI,IWVI)              P4760210
      AWVS=BXVS+AW1S(IWVI)**IW1I(IWVI)-AW2S(IWVI,IWVI)**IW2I(IWVI,IWVI) P4760220
     1  -AW3S(IWVI,IWVI,IWVI)**IW3I(IWVI,IWVI,IWVI)                     P4760230
      RETURN                                                            P4760240
      END                                                               P4760250
C***********************************************************************P1670010
C*****                                                                  P1670020
C*****                     SBRTN - (167)                                P1670030
C*****                                                                  P1670040
C***********************************************************************P1670050
C*****  GENERAL PURPOSE                                         ASA REFSP1670060
C*****    TO TEST SUBROUTINE SUBPROGRAMS                          8.4.1 P1670070
C*****  RESTRICTIONS OBSERVED                                           P1670080
C*****    SYMBOLIC NAME OF A SUBROUTINE MAY NOT APPEAR IN ANY 8.4.1.//19P1670090
C*****    STATEMENT IN THIS SUBROUTINE EXCEPT IN THE                    P1670100
C*****    SUBROUTINE STATEMENT ITSELF                                   P1670110
C*****  * SYMBOLIC NAMES OF DUMMY ARGUMENTS MAY NOT APPEAR    8.4.1.1/23P1670120
C*****    IN EQUIVALENCE OR COMMON STATEMENTS IN THE SUBPROGRAM         P1670130
C*****  * SUBROUTINES MAY NOT CONTAIN A FUNCTION STATEMENT,   8.4.1.//29P1670140
C*****    ANOTHER SUBROUTINE STATEMENT, OR ANY STATEMENT THAT           P1670150
C*****    DIRECTLY OR INDIRECTLY REFERENCES THE SUBROUTINE              P1670160
C*****    BEING DEFINED.                                                P1670170
C*****  * AT LEAST ONE RETURN STATEMENT MUST BE IN A SUBROUTINE         P1670180
C*****                                                        8.4.1.1/33P1670190
C*****  GENERAL COMMENTS                                                P1670200
C*****    THIS SEGMENT IS TO BE RUN WITH SEGMENT 407, 417, 427          P1670210
C*****                                                                  P1670220
C*****  S P E C I F I C A T I O N S  SEGMENT 167                        P1670230
C*****                                                                  P0013440
C*****  WHEN EXECUTING ONLY SEGMENT 167, THE SPECIFICATION STATEMENTS   P0013445
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013450
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013455
C*****                                                                  P0013460
C=    DIMENSION IAB1I(4), IAB2I(3,3), AB1S(4), AB2S(3,3)                P0013465
C=    COMMON AXVS, CXVS, IXVI, IAX1I(4), IAX2I(3,3), IAX3I(2,2,2),      P0013470
C=   1         BXVS, AX1S(4), AX2S(3,3)                                 P0013475
C=    EXTERNAL SQRT                                                     P0013480
      DIMENSION IAB1I(4), IAB2I(3,3), AB1S(4), AB2S(3,3)                P167A1
      COMMON AXVS, CXVS, IXVI, IAX1I(4), IAX2I(3,3), IAX3I(2,2,2),      P167A2
     1         BXVS, AX1S(4), AX2S(3,3)                                 P167A3
      EXTERNAL SQRT                                                     P167A4
C*****                                                                  P0013485
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1670240
C*****                                                                  P0072750
C*****  WHEN EXECUTING ONLY SEGMENT 167, THE FOLLOWING STATEMENT        P0072755
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0072760
C=    NUVI = 6                                                          P0072765
      NUVI = 6                                                          P167B1
C*****                                                                  P0072770
C*****    WRITE HEADING                                                 P1670250
      WRITE (NUVI,1670)                                                 P1670260
1670  FORMAT(1H1,1X,35HSBRTN - (167) SUBROUTINE SUBPROGRAM/             P1670270
     1 /2X,16HASA REF. - 8.4.1//2X,7HRESULTS)                           P1670280
C*****    SET ALL VARIABLES AND SOME ELEMENTS IN ARRAYS TO ZERO         P1670290
      IAVI = 4                                                          P1670300
      AVS = 0.0                                                         P1670310
      IAB1I(1) = 0                                                      P1670320
      IAB1I(3) = 0                                                      P1670330
      IAB2I(1,2) = 0                                                    P1670340
      IAB2I(3,3) = 0                                                    P1670350
C*****                                                                  P1670360
      AB1S(1) = 0.0                                                     P1670370
      AB1S(4) = 0.0                                                     P1670380
      AB2S(1,3) = 0.0                                                   P1670390
      AB2S(2,3) = 0.0                                                   P1670400
C*****                                                                  P1670410
      IXVI = 0                                                          P1670420
      BXVS = 0.0                                                        P1670430
      IAX1I(2) = 0                                                      P1670440
      IAX2I(1,2) = 0                                                    P1670450
C*****                                                                  P1670460
      AX1S(2) = 0.0                                                     P1670470
      AX2S(1,2) = 0.0                                                   P1670480
C*****                                                                  P1670490
C*****    SET ELEMENTS IN INTEGER AND REAL ARRAY TO 1 TO TEST           P1670500
C*****    EXPRESSIONS IN SUBROUTINE ARGUMENT                            P1670510
      IAB1I(2) = 1                                                      P1670520
      IAB1I(4) = 1                                                      P1670530
      IAB2I(2,1) = 1                                                    P1670540
      IAB2I(2,2) = 1                                                    P1670550
C*****                                                                  P1670560
      AB1S(2) = 1.0                                                     P1670570
      AB1S(3) = 1.0                                                     P1670580
      AB2S(1,2) = 1.0                                                   P1670590
      AB2S(2,2) = 1.0                                                   P1670600
C*****                                                                  P1670610
      CALL  AAQ(IAVI, AVS, IAB1I, IAB2I, AB1S, AB2S, SQRT,              P1670620
     1IAB1I(2)+IAB1I(4)*IAB2I(2,1)-IAB2I(2,2),                          P1670630
     2AB1S(2)+AB1S(3)*AB2S(1,2)-AB2S(2,2),1.0)                          P1670640
      CALL ACQ                                                          P1670650
C*****    WRITE RESULTS                                                 P1670660
      WRITE (NUVI,1671) IAVI, AVS, IAB1I(1), IAB1I(3), IAB2I(1,2),      P1670670
     A                  IAB2I(3,3), AB1S(1), AB1S(4),                   P1670680
     B                  AB2S(1,3), AB2S(2,3), IXVI, BXVS,               P1670690
     C                  IAX1I(2), IAX2I(1,2), AX1S(2),                  P1670700
     D                  AX2S(1,2)                                       P1670710
1671  FORMAT  (//I10/F11.1/4(I10/),4(F11.1/),I10/F11.1/2(I10/),2(F11.1/ P1670720
     A))                                                                P1670730
      WRITE (NUVI,1672)                                                 P1670740
1672  FORMAT (//2X,38HTEST SUCCESSFUL IF ALL RESULTS EQUAL 1//)         P1670750
C*****    END OF TEST SEGMENT 167                                       P1670760
C*****  WHEN EXECUTING ONLY SEGMENT 167, THE STOP AND END CARDS         P1670770
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=                 P1670780
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1670790
C=    STOP                                                              P1670800
C=    END                                                               P1670810
      STOP                                                              P167C1
      END                                                               P167C2
C***********************************************************************P4070010
C*****                                                                  P4070020
C*****                        AAQ - (407)                               P4070030
C*****                                                                  P4070040
C***********************************************************************P4070050
C*****    THIS SUBROUTINE IS TO BE RUN WITH SEGMENT 167                 P4070060
      SUBROUTINE AAQ (IWVI, AWVS, IAW1I, IAW2I, AW1S, AW2S, SQFI,       P4070070
     1MWVI, BWVS, CWVS)                                                 P4070080
      DIMENSION  IAW1I(4), IAW2I(3,3), AW1S(4),                         P4070090
     1           AW2S(3,3)                                              P4070100
      IWVI = INT(SQFI(FLOAT(IWVI) + .5)) - 1                            P4070110
      AWVS = AWVS + 1.0                                                 P4070120
      IAVI = 5                                                          P4070130
      IAW1I(1) = MWVI                                                   P4070140
      IAW1I(3) = IAW1I(3) + 1                                           P4070150
      IAW2I(3,3) = IAW2I(3,3) + 1                                       P4070160
      AW1S(1) = BWVS                                                    P4070170
      AW2S(1,3) = CWVS                                                  P4070180
C*****                                                                  P4070190
C*****    CALL A SUBROUTINE FROM ANOTHER SUBROUTINE                     P4070200
      CALL ABQ(IAW2I, AW1S, AW2S)                                       P4070210
      RETURN                                                            P4070220
      END                                                               P4070230
C***********************************************************************P4170010
C*****                                                                  P4170020
C*****                       ABQ - (417)                                P4170030
C*****                                                                  P4170040
C***********************************************************************P4170050
      SUBROUTINE ABQ(ICW2I, CW1S, CW2S)                                 P4170060
      DIMENSION ICW2I(3,3), CW1S(4), CW2S(3,3)                          P4170070
      ICW2I(1,2) = ICW2I(1,2) + 1                                       P4170080
C*****                                                                  P4170090
      CW1S(4) = CW1S(4) + 1.0                                           P4170100
      CW2S(2,3) = CW2S(2,3) + 1.0                                       P4170110
      RETURN                                                            P4170120
      END                                                               P4170130
C***********************************************************************P4270010
C*****                                                                  P4270020
C*****                       ACQ - (427)                                P4270030
C*****                                                                  P4270040
C***********************************************************************P4270050
      SUBROUTINE ACQ                                                    P4270060
      DIMENSION  IDX1I(4), IDX2I(3,3), IDX3I(2,2,2)                     P4270070
     1         ,AAX1S(4), AAX2S(3,3)                                    P4270080
      COMMON ABXVS, ACXVS, IAXVI, IDX1I, IDX2I, IDX3I,                  P4270090
     1       AAXVS, AAX1S, AAX2S                                        P4270100
      IAXVI = IAXVI+1                                                   P4270110
      AAXVS = AAXVS +1.0                                                P4270120
      IDX1I(2) = IDX1I(2) + 1                                           P4270130
      IDX2I(1,2) = IDX2I(1,2) + 1                                       P4270140
C*****                                                                  P4270150
      AAX1S(2) = AAX1S(2) * 2. + 1.0                                    P4270160
      AAX2S(1,2) = AAX2S(1,2) + 4.0 - 3.0                               P4270170
C*****                                                                  P4270180
      RETURN                                                            P4270190
C*****    END OF TEST SEGMENT 427                                       P4270200
      END                                                               P4270210
C***********************************************************************P1680010
C*****                                                                  P1680020
C*****                       FSBRT - (168)                              P1680030
C*****                                                                  P1680040
C***********************************************************************P1680050
C*****  GENERAL PURPOSE                                         ASA REFSP1680060
C*****    TO TEST SUBROUTINE SUBPROGRAM IN FORTRAN               8.4.1  P1680070
C*****  RESTRICTIONS OBSERVED                                           P1680080
C*****    SYMBOLIC NAME OF A SUBROUTINE MAY NOT APPEAR IN ANY 8.4.1.1/56P1680090
C*****    STATEMENT IN THIS SUBROUTINE EXCEPT IN THE                    P1680100
C*****    SUBROUTINE STATEMENT ITSELF.                                  P1680110
C*****  * SYMBOLIC NAME OF DUMMY ARGUMENTS MAY NOT APPEAR     8.4.1.1/39P1680120
C*****    IN EQUIVALENCE OR COMMON STATEMENTS IN THE SUBPROGRAM         P1680130
C*****  * SUBROUTINES MAY NOT CONTAIN A FUNCTION STATEMENT,   8.4.1.1/45P1680140
C*****    ANOTHER SUBROUTINE STATEMENT, OR ANY STATEMENT THAT           P1680150
C*****    DIRECTLY OR INDIRECTLY REFERENCES THE SUBROUTINE              P1680160
C*****    BEING DEFINED.                                                P1680170
C*****  * AT LEAST ONE RETURN STATEMENT MUST BE IN A SUBROUTINE         P1680180
C*****                                                        8.4.1.1/49P1680190
C*****  GENERAL COMMENTS                                                P1680200
C*****    THIS SEGMENT IS TO BE RUN WITH SEGMENT 408 , 418, 428         P1680210
C*****                                                                  P1680220
C*****  S P E C I F I C A T I O N S  SEGMENT 168                        P1680230
C*****                                                                  P0013490
C*****  WHEN EXECUTING ONLY SEGMENT 168, THE SPECIFICATION STATEMENTS   P0013495
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C=                       P0013500
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013505
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C*****                                                                  P0013510
C=    DIMENSION IAB1I(4), IAB2I(3,3), IAB3I(2,2,2), AB1S(4), AB2S(3,3), P0013515
C=   A          AB3S(2,2,2)                                             P0013520
C=    COMMON AXVS, CXVS, IXVI, IAX1I(4), IAX2I(3,3), IAX3I(2,2,2),      P0013525
C=   A      BXVS, AX1S(4), AX2S(3,3), AX3S(2,2,2), AXVD, AX1D(2),       P0013530
C=   B      AX2D(2,2), AX3D(2,2,2), AXVC, AX1C(2), AX2C(2,2),           P0013535
C=   C      AX3C(2,2,2), AXVB, AX1B(2), AX2B(2,2), AX3B(2,2,2)          P0013540
C=    DOUBLE PRECISION AXVD, AX1D, AX2D, AX3D                           P0013545
C=    DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P0013550
C=    COMPLEX AXVC, AX1C, AX2C, AX3C                                    P0013555
C=    COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P0013560
C=    LOGICAL AXVB, AX1B, AX2B, AX3B                                    P0013565
C=    LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB                            P0013570
      DIMENSION IAB1I(4), IAB2I(3,3), IAB3I(2,2,2), AB1S(4), AB2S(3,3), P168A1
     A          AB3S(2,2,2)                                             P168A2
      COMMON AXVS, CXVS, IXVI, IAX1I(4), IAX2I(3,3), IAX3I(2,2,2),      P168A3
     A      BXVS, AX1S(4), AX2S(3,3), AX3S(2,2,2), AXVD, AX1D(2),       P168A4
     B      AX2D(2,2), AX3D(2,2,2), AXVC, AX1C(2), AX2C(2,2),           P168A5
     C      AX3C(2,2,2), AXVB, AX1B(2), AX2B(2,2), AX3B(2,2,2)          P168A6
      DOUBLE PRECISION AXVD, AX1D, AX2D, AX3D                           P168A7
      DOUBLE PRECISION AVD,A1D(4),A2D(2,2),A3D(2,2,2)                   P168A8
      COMPLEX AXVC, AX1C, AX2C, AX3C                                    P168A9
      COMPLEX AVC,A1C(12),A2C(2,2),A3C(2,2,1)                           P168AA
      LOGICAL AXVB, AX1B, AX2B, AX3B                                    P168AB
      LOGICAL A1B(2),A2B(2,2),A3B(2,2,2),AVB                            P168AC
C*****                                                                  P0013575
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1680240
C*****                                                                  P0072780
C*****  WHEN EXECUTING ONLY SEGMENT 168, THE FOLLOWING STATEMENT        P0072785
C*****  NUVI  =  6  MUST HAVE THE C= IN COLUMNS 1  AND  2  REMOVED.     P0072790
C=    NUVI = 6                                                          P0072795
      NUVI = 6                                                          P168B1
C*****    SET INTEGER VARIABLES AND SOME ELEMENTS IN ARRAYS TO ZERO     P1680250
C*****    WRITE HEADING                                                 P1680260
      WRITE (NUVI,1680)                                                 P1680270
1680  FORMAT (1H1,1X,36HFSBRT - (168) SUBROUTINE SUBPROGRAMS/           P1680280
     A/18H  ASA REF. - 8.4.1//2X,7HRESULTS)                             P1680290
      IAVI = 0                                                          P1680300
      IAB1I(1) = 0                                                      P1680310
      IAB2I(1,2) = 0                                                    P1680320
      IAB3I(1,1,2) = 0                                                  P1680330
      IXVI = 0                                                          P1680340
      IAX1I(1) = 0                                                      P1680350
      IAX2I(1,2) = 0                                                    P1680360
      IAX3I(1,1,2) = 0                                                  P1680370
C*****    SET REAL VARIABLES AND SOME ELEMENTS IN ARRAYS TO ONE         P1680380
      AVS = 1.                                                          P1680390
      AB1S(1) = 1.                                                      P1680400
      AB2S(1,2) = 1.                                                    P1680410
      AB3S(1,1,2) = 1.                                                  P1680420
      BXVS = 1.                                                         P1680430
      AX1S(2) = 1.                                                      P1680440
      AX2S(1,2) = 1.                                                    P1680450
      AX3S(1,1,2) = 1.                                                  P1680460
C*****    SET DP VARIABLES AND SOME ELEMENTS IN ARRAY TO TWO            P1680470
      AVD = 2.0D0                                                       P1680480
      A1D(1) = 2.0D0                                                    P1680490
      A2D(1,2) = 2.0D0                                                  P1680500
      A3D(1,1,2) = 2.0D0                                                P1680510
      AXVD = 2.0D0                                                      P1680520
      AX1D(1) = 2.0D0                                                   P1680530
      AX2D(1,2) = 2.D0                                                  P1680540
      AX3D(1,1,2) = 2.0D0                                               P1680550
C*****    SET COMPLEX VARIABLES AND SOME ELEMENTS IN ARRAYS TO (3.0,3.0)P1680560
      AVC = (3.0,3.0)                                                   P1680570
      A1C(1) = (3.0,3.0)                                                P1680580
      A2C(1,2) = (3.0,3.0)                                              P1680590
      A3C(1,2,1) = (3.0,3.0)                                            P1680600
      AXVC = (3.0,3.0)                                                  P1680610
      AX1C(1) = (3.0,3.0)                                               P1680620
      AX2C(1,2) = (3.0,3.0)                                             P1680630
      AX3C(1,1,2) = (3.0,3.0)                                           P1680640
C*****    SET LOGICAL VARIABLES AND SOME ELEMENTS IN ARRAYS TO .FALSE.  P1680650
      AVB = .FALSE.                                                     P1680660
      A1B(1) = .FALSE.                                                  P1680670
      A2B(1,2) = .FALSE.                                                P1680680
      A3B(1,1,2) = .FALSE.                                              P1680690
      AXVB = .FALSE.                                                    P1680700
      AX1B(1) = .FALSE.                                                 P1680710
      AX2B(1,2) = .FALSE.                                               P1680720
      AX3B(1,1,2) = .FALSE.                                             P1680730
C*****    SET INTEGER AND REAL VARIABLES FOR EXPRESSION USAGE IN        P1680740
C*****    DUMMY ARGUMENT                                                P1680750
      IAB1I(4) = 0                                                      P1680760
      IAB1I(2) = 0                                                      P1680770
      AB1S(4) = 0.0                                                     P1680780
      AB1S(2) = 0.0                                                     P1680790
      JAVI = 1                                                          P1680800
      KAVI = 1                                                          P1680810
      LAVI = 1                                                          P1680820
      MAVI = 1                                                          P1680830
      NAVI = 1                                                          P1680840
      ABVS = 1.                                                         P1680850
      ACVS = 1.                                                         P1680860
      ADVS = 2.                                                         P1680870
      AEVS = 2.                                                         P1680880
      AFVS = 2.                                                         P1680890
      CALL ADQ(IAVI,IAB1I, IAB2I, IAB3I, AVS, AB1S, AB2S, AB3S, AVD,    P1680900
     A         A1D, A2D, A3D, AVC, A1C, A2C, A3C, AVB, A1B, A2B, A3B,   P1680910
     B         JAVI+KAVI*LAVI-MAVI/NAVI,1,ABVS+ACVS*ADVS-AEVS/AFVS,2.)  P1680920
      WRITE (NUVI,1681)                                                 P1680930
      CALL AFQ                                                          P1680940
1681  FORMAT ( /28H  TEST IS SUCCESSFUL IF EACH/                        P1680950
     A28H  GROUP CONTAINS SAME VALUES)                                  P1680960
      WRITE (NUVI,1682) IAVI, IAB1I(1), IAB1I(2), IAB1I(4), IAB2I(1,2), P1680970
     A                  IAB3I(1,1,2), IXVI, IAX1I(1), IAX2I(1,2),       P1680980
     B                  IAX3I(1,1,2), AVS, AB1S(1), AB2S(1,2), AB3S(1,1,P1680990
     C2),AB1S(2),AB1S(4),   BXVS, AX1S(2), AX2S(1,2), AX3S(1,1,2), AVD, P1681000
     D                  A1D(1), A2D(1,2), A3D(1,1,2), AXVD, AX1D(1),    P1681010
     E                  AX2D(1,2), AX3D(1,1,2), AVC, A1C(1), A2C(1,2),  P1681020
     F                  A3C(1,2,1), AXVC, AX1C(1), AX2C(1,2),           P1681030
     G                  AX3C(1,1,2), AVB, A1B(1), A2B(1,2), A3B(1,1,2), P1681040
     H                  AXVB, AX1B(1), AX2B(1,2), AX3B(1,1,2)           P1681050
1682  FORMAT (   10(I10/)/                                              P1681060
     1             10(F11.1/)/                                          P1681070
     2              8(1PD15.1/)/                                        P1681080
     3              8(0PF5.1,F5.1/)/                                    P1681090
     4              8(L10/) )                                           P1681100
C*****    END OF TEST SEGMENT 168                                       P1681110
C*****  WHEN EXECUTING ONLY SEGMENT 168, THE STOP AND END CARDS         P1681120
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C= IN               P1681130
C***** COLUMNS  1  AND  2  REMOVED.                                     P1681140
C=    STOP                                                              P1681150
C=    END                                                               P1681160
      STOP                                                              P168C1
      END                                                               P168C2
C***********************************************************************P4080010
C*****                                                                  P4080020
C*****                        ADQ - (408)                               P4080030
C*****                                                                  P4080040
C***********************************************************************P4080050
C*****  SUBROUTINE ADQ CALLED BY SEG. FSBRT(168)                        P4080060
      SUBROUTINE ADQ(IWVI,IAW1I,IAW2I,IAW3I,AWVS,AW1S,AW2S,AW3S,        P4080070
     A               AWVD,AW1D,AW2D,AW3D,AWVC,AW1C,AW2C,AW3C,           P4080080
     B               AWVB,AW1B,AW2B,AW3B,KWVI,MWVI,BWVS,CWVS)           P4080090
      DIMENSION IAW1I(4), IAW2I(3,3), IAW3I(2,2,2), AW1S(4), AW2S(3,3), P4080100
     A           AW3S(2,2,2), AW1D(2), AW2D(2,2), AW3D(2,2,2), AW1C(2), P4080110
     B          AW2C(2,2), AW3C(2,2,1), AW1B(2), AW2B(2,2),             P4080120
     C           AW3B(2,2,2)                                            P4080130
      DOUBLE PRECISION  AWVD, AW1D, AW2D, AW3D                          P4080140
      COMPLEX           AWVC, AW1C, AW2C, AW3C                          P4080150
      LOGICAL           AWVB, AW1B, AW2B, AW3B                          P4080160
C*****    STORE INTEGER AND REAL EXPRESSIONS                            P4080170
      IAW1I(4) = KWVI                                                   P4080180
      IAW1I(2) = MWVI                                                   P4080190
      AW1S(4) = BWVS                                                    P4080200
      AW1S(2) = CWVS                                                    P4080210
      CALL AEQ (IWVI,IAW1I,IAW2I,IAW3I,AWVS,AW1S,AW2S,AW3S)             P4080220
C*****    INCREMENT DOUBLE PRECISION                                    P4080230
      AWVD = AWVD + AWVD                                                P4080240
      AW1D(1) = AW1D(1) + AW1D(1)                                       P4080250
      AW2D(1,2) = AW2D(1,2) + AW2D(1,2)                                 P4080260
      AW3D(1,1,2) = AW3D(1,1,2) + AW3D(1,1,2)                           P4080270
C*****    INCREMENT COMPLEX                                             P4080280
      AWVC = AWVC + AWVC                                                P4080290
      AW1C(1) = AW1C(1) + AW1C(1)                                       P4080300
      AW2C(1,2) = AW2C(1,2) + AW2C(1,2)                                 P4080310
      AW3C(1,2,1) = AW3C(1,2,1) + AW3C(1,2,1)                           P4080320
C*****    CHANGE LOGICAL                                                P4080330
      AWVB = .NOT. AWVB                                                 P4080340
      AW1B(1) = .NOT. AW1B(1)                                           P4080350
      AW2B(1,2) = .NOT. AW2B(1,2)                                       P4080360
      AW3B(1,1,2) = .NOT. AW3B(1,1,2)                                   P4080370
      RETURN                                                            P4080380
      END                                                               P4080390
C***********************************************************************P4180010
C*****                                                                  P4180020
C*****                       AEQ - (418)                                P4180030
C*****                                                                  P4180040
C***********************************************************************P4180050
C*****  SUBROUTINE AEQ CALLED BY SEG  ADQ(408) WHICH IS                 P4180060
C*****  CALLED BY SEG. FSBRT(168)                                       P4180070
      SUBROUTINE AEQ(KWVI, KAW1I, KAW2I, KAW3I, AAWVS, AAW1S, AAW2S,    P4180080
     A               AAW3S)                                             P4180090
      DIMENSION KAW1I(4),KAW2I(3,3),KAW3I(2,2,2),AAW1S(4),AAW2S(3,3),   P4180100
     A           AAW3S(2,2,2)                                           P4180110
C*****    INCREMENT INTEGERS                                            P4180120
      KWVI = KWVI + 1                                                   P4180130
      KAW1I(1) = KAW1I(1) + 1                                           P4180140
      KAW2I(1,2) = KAW2I(1,2) + 1                                       P4180150
      KAW3I(1,1,2) = KAW3I(1,1,2)+1                                     P4180160
C*****    INCREMENT REAL                                                P4180170
      AAWVS = AAWVS + 1.                                                P4180180
      AAW1S(1) = AAW1S(1) + 1.                                          P4180190
      AAW2S(1,2) = AAW2S(1,2) + 1.                                      P4180200
      AAW3S(1,1,2) = AAW3S(1,1,2) + 1.                                  P4180210
      RETURN                                                            P4180220
      END                                                               P4180230
C***********************************************************************P4280010
C*****                                                                  P4280020
C*****                       AFQ - (428)                                P4280030
C*****                                                                  P4280040
C***********************************************************************P4280050
C*****  SUBROUTINE AFQ CALLED BY SEG. FSBRT(168)                        P4280060
      SUBROUTINE AFQ                                                    P4280070
      COMMON ABXVS, ACXVS, IAXVI, IAX1I(4), IAX2I(3,3), IAX3I(2,2,2),   P4280080
     A      AXVS, AX1S(4), AX2S(3,3), AX3S(2,2,2), AXVD, AX1D(2),       P4280090
     2      AX2D(2,2), AX3D(2,2,2),AXVC, AX1C(2), AX2C(2,2), AX3C(2,2,2)P4280100
     3     ,AXVB, AX1B(2), AX2B(2,2), AX3B(2,2,2)                       P4280110
      DOUBLE PRECISION AXVD, AX1D, AX2D, AX3D                           P4280120
      COMPLEX AXVC, AX1C, AX2C, AX3C                                    P4280130
      LOGICAL AXVB, AX1B, AX2B, AX3B                                    P4280140
C*****    SET INTEGERS TO 1                                             P4280150
      IAXVI = 1                                                         P4280160
      IAX1I(1) = 1                                                      P4280170
      IAX2I(1,2) = 1                                                    P4280180
      IAX3I(1,1,2) = 1                                                  P4280190
C*****    SET REAL TO 2                                                 P4280200
      AXVS = 2.                                                         P4280210
      AX1S(2) = 2.                                                      P4280220
      AX2S(1,2) = 2.                                                    P4280230
      AX3S(1,1,2) = 2.                                                  P4280240
C*****    SET DP TO 4                                                   P4280250
      AXVD = 4.0D0                                                      P4280260
      AX1D(1) = 4.0D0                                                   P4280270
      AX2D(1,2) = 4.0D0                                                 P4280280
      AX3D(1,1,2) = 4.0D0                                               P4280290
C*****    SET COMPLEX TO 6                                              P4280300
      AXVC = (6.0,6.0)                                                  P4280310
      AX1C(1) = (6.0,6.0)                                               P4280320
      AX2C(1,2) = (6.0,6.0)                                             P4280330
      AX3C(1,1,2) = (6.0,6.0)                                           P4280340
C*****    CHANGE LOGICAL                                                P4280350
      AXVB = .TRUE.                                                     P4280360
      AX1B(1) = .TRUE.                                                  P4280370
      AX2B(1,2) = .TRUE.                                                P4280380
      AX3B(1,1,2) = .TRUE.                                              P4280390
      RETURN                                                            P4280400
      END                                                               P4280410
C***********************************************************************P1690010
C*****                                                                  P1690020
C*****                       BLKDT - (169)                              P1690030
C*****                                                                  P1690040
C***********************************************************************P1690050
C*****  GENERAL PURPOSE                                         ASA REFSP1690060
C*****    TO TEST BLOCK DATA SUBPROGRAM                           8.5   P1690070
C*****  GENERAL COMMENTS                                                P1690080
C*****    THIS SEGMENT IS TO BE RUN WITH SEGMENT 409.  THIS             P1690090
C*****    SEGMENT WRITES OUT THE DATA FORMED IN SEGMENT 409.            P1690100
C*****                                                                  P1690110
C*****  S P E C I F I C A T I O N S  SEGMENT 169                        P1690120
C*****                                                                  P0013580
C*****  WHEN EXECUTING ONLY SEGMENT 169, THE SPECIFICATION STATEMENTS   P0013585
C*****  WHICH APPEAR AS COMMENTS MUST HAVE THE C=                       P0013590
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013595
C*****                                                                  P0013600
C=    COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P0013605
C=   A       /BLK2/DXVS, DX1S(2), DX2S(2,2)                             P0013610
C=   B       /BLK3/DXVD, DX1D(2), DX2D(2,2)                             P0013615
C=   C       /BLK4/DXVC, DX1C(2), DX2C(2,2)                             P0013620
C=   D       /BLK5/DXVB, DX1B(2), DX2B(2,2)                             P0013625
C=   E       /BLK6/JAX3I(2,2,2), DX3S(2,2,2), DX3D(2,2,2),              P0013630
C=   F             DZ3C(2,2,2), DX3B(2,2,2)                             P0013635
C=    DOUBLE PRECISION DXVD, DX1D, DX2D, DX3D                           P0013640
C=    COMPLEX          DXVC, DX1C, DX2C, DZ3C                           P0013645
C=    LOGICAL          DXVB, DX1B, DX2B, DX3B                           P0013650
      COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P169A1
     A       /BLK2/DXVS, DX1S(2), DX2S(2,2)                             P169A2
     B       /BLK3/DXVD, DX1D(2), DX2D(2,2)                             P169A3
     C       /BLK4/DXVC, DX1C(2), DX2C(2,2)                             P169A4
     D       /BLK5/DXVB, DX1B(2), DX2B(2,2)                             P169A5
     E       /BLK6/JAX3I(2,2,2), DX3S(2,2,2), DX3D(2,2,2),              P169A6
     F             DZ3C(2,2,2), DX3B(2,2,2)                             P169A7
      DOUBLE PRECISION DXVD, DX1D, DX2D, DX3D                           P169A8
      COMPLEX          DXVC, DX1C, DX2C, DZ3C                           P169A9
      LOGICAL          DXVB, DX1B, DX2B, DX3B                           P169AA
C*****                                                                  P0013655
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P1690130
C*****                                                                  P0072800
C*****  WHEN EXECUTING ONLY SEGMENT 169, THE FOLLOWING STATEMENT        P0072805
C*****  NUVI  =  6  MUST HAVE THE C= IN COLUMNS 1  AND  2  REMOVED.     P0072810
C=    NUVI = 6                                                          P0072815
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      NUVI = 6                                                          P169B1
C*****    WRITE HEAOING FOR SEGMENT 169                                 P1690140
      WRITE (NUVI,1690)                                                 P1690150
1690  FORMAT (1H1,1X,35HBLKDT - (169) BLOCK DATA SUBPROGRAM//           P1690160
     A16H  ASA REF. - 8.5//2X,7HRESULTS)                                P1690170
      WRITE (NUVI,1691)                                                 P1690180
1691  FORMAT ( /28H  TEST IS SUCCESSFUL IF EACH/                        P1690190
     A28H  GROUP CONTAINS SAME VALUES)                                  P1690200
      WRITE (NUVI,1692) JAX2I(1,1), JAX1I(2), JAX2I(2,1), JAX3I(2,2,1)  P1690210
     A      ,OX3S(1,2,1), DX1S(1), OX2S(1,1), OX3S(2,2,1), DX20(2,2)    P1690220
     B      ,OX1D(2), OX20(2,1), OX30(2,2,1), OX2C(2,2), OX1C(2)        P1690230
     C      ,DX2C(2,1), OZ3C(2,1,1), OX2B(2,2),  OX1B(2), OX2B(2,1)     P1690240
     D      ,OX3B(2,2,1), JAX2I(3,1),                                   P1690250
     E      OX3B(2,1,2), OX2S(2,2)                                      P1690260
1692  FORMAT (// 4(I10/)//                                              P1690270
     A                4(F12.1/)//                                       P1690280
     B                4(1P016.1/)//                                     P1690290
     C                4(0PF6.1,F6.1/)//                                 P1690300
     D                4(L10/)//                                         P1690310
     F                3(2H  ,A2/))                                      P1690320
C*****    END OF TEST SEGMENT 169                                       P1690330
C*****  WHEN EXECUTING ONLY SEGMENT 169, THE STOP ANO ENO CAROS         P1690340
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C= IN               P1690350
C***** COLUMNS  1  AND  2  REMOVEO.                                     P1690360
C=    STOP                                                              P1690370
C=    ENO                                                               P1690380
      STOP                                                              P169C1
      ENO                                                               P169C2
C***********************************************************************P4090010
C*****                                                                  P4090020
C*****                         BLOKO - (409)                            P4090030
C*****                                                                  P4090040
C***********************************************************************P4090050
C*****  GENERAL PURPOSE                                                 P4090060
C*****    THIS SEGMENT CONTAINS ONE BLOCK DATA SUBPROGRAM.              P4090070
C*****    IT IS TO BE RUN WITH SEGMENT 169                              P4090080
C*****  GENERAL COMMENTS                                                P4090090
C*****    THIS SEGMENT USES ALL THE PERMISSIBLE STATEMENTS IN A         P4090100
C*****    BLOCK OATA SUBPROGRAM. THE DATA STATEMENT CONSISTS OF ALL     P4090110
C*****    TYPES OF VARIABLES ANO ARRAYS.  A HOLLERITH CONSTANT          P4090120
C*****    IS ASSIGNED TO INTEGER, REAL AND LOGICAL                      P4090130
      BLOCK DATA                                                        P4090140
      COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P4090150
     A       /BLK2/OXVS, OX1S(2), DX2S(2,2)                             P4090160
     B       /BLK3/OXVO, OX10(2), DX2D(2,2)                             P4090170
     C       /BLK4/OXVC, DX1C(2), DX2C(2,2)                             P4090180
     D       /BLK5/DXVB, OX1B(2), OX2B(2,2)                             P4090190
     E       /BLK6/JAX3I(2,2,2), OX3S(2,2,2), OX30(2,2,2),              P4090200
     F             OZ3C(2,2,2), OX3B(2,2,2)                             P4090210
      OIMENSION CY3C(2,2,2)                                             P4090220
      DOUBLE PRECISION OXVO, OX10, OX20, OX3D                           P4090230
      COMPLEX          DXVC, OX1C, DX2C, OZ3C, CY3C                     P4090240
      LOGICAL          OXVB, DX1B, DX2B, DX3B                           P4090250
      INTEGER JXVI                                                      P4090260
      REAL OXVS                                                         P4090270
      EQUIVALENCE (DZ3C(1,1,1), CY3C(1,1,1))                            P4090280
      OATA JAX2I(1,1), JAX1I(2), JAX2I(2,1), JAX3I(2,2,1),OX3S(1,2,1),  P4090290
     A     DX1S(1), OX2S(1,1), OX3S(2,2,1), OX20(2,2), OX10(2),         P4090300
     B     DX20(2,1), OX30(2,2,1), DX2C(2,2), OX1C(2), OX2C(2,1),       P4090310
     C     DZ3C(2,1,1), OX2B(2,2), DX1B(2), OX2B(2,1), DX3B(2,2,1),     P4090320
     D     JAX2I(3,1),DX3B(2,1,2),DX2S(2,2)/4*2,4*3.0,4*4.0D0,4*(4.,5.),P4090330
     E      4*.TRUE.,                 2HAB, 2HAB, 2HAB/                 P4090340
C*****    END OF TEST SEGMENT 409                                       P4090350
      ENO                                                               P4090360
C***********************************************************************P1790010
C*****                                                                  P1790020
C*****                              BLKOA - (179)                       P1790030
C*****                                                                  P1790040
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C***********************************************************************P1790050
C*****  GENERAL PURPOSE                                         ASA REF P1790060
C*****    TO TEST BLOCK DATA SUBPROGRAMS                         8.5    P1790070
C*****    THIS SEGMENT IS TO BE RUN WITH SEGMENTS 419, 429, 439.   THIS P1790080
C*****    SEGMENT WRITES OUT THE DATA FORMED IN SEGMENT 419, 429, 439   P1790090
C*****                                                                  P1790100
C*****  S P E C I F I C A T I O N S  SEGMENT 179                        P1790110
C*****                                                                  P0013660
C*****  WHEN EXECUTING ONLY SEGMENT 179, THE SPECIFICATION STATEMENTS   P0013665
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013670
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013675
C*****                                                                  P0013680
C=    DOUBLE PRECISION DXVD, DX1D, DX2D, DX3D                           P0013685
C=    COMPLEX          DXVC, DX1C, DX2C, DZ3C                           P0013690
C=    COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P0013695
C=   A       /BLK2/DXVS, DX1S(2), DX2S(2,2)                             P0013700
C=   B       /BLK3/DXVD, DX1D(2), DX2D(2,2)                             P0013705
C=   C       /BLK4/DXVC, DX1C(2), DX2C(2,2)                             P0013710
C=   D       /BLK5/DXVB, DX1B(2), DX2B(2,2)                             P0013715
C=   E       /BLK6/JAX3I(2,2,2), DX3S(2,2,2), DX3D(2,2,2),              P0013720
C=   F             DZ3C(2,2,2), DX3B(2,2,2)                             P0013725
C=    LOGICAL          DXVB, DX1B, DX2B, DX3B                           P0013730
      DOUBLE PRECISION DXVD, DX1D, DX2D, DX3D                           P179A1
      COMPLEX          DXVC, DX1C, DX2C, DZ3C                           P179A2
      COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P179A3
     A       /BLK2/DXVS, DX1S(2), DX2S(2,2)                             P179A4
     B       /BLK3/DXVD, DX1D(2), DX2D(2,2)                             P179A5
     C       /BLK4/DXVC, DX1C(2), DX2C(2,2)                             P179A6
     D       /BLK5/DXVB, DX1B(2), DX2B(2,2)                             P179A7
     E       /BLK6/JAX3I(2,2,2), DX3S(2,2,2), DX3D(2,2,2),              P179A8
     F             DZ3C(2,2,2), DX3B(2,2,2)                             P179A9
      LOGICAL          DXVB, DX1B, DX2B, DX3B                           P179AA
C*****                                                                  P0013735
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P1790120
C*****  WHEN EXECUTING ONLY SEGMENT 179, THE FOLLOWING STATEMENT        P0072820
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0072825
C*****                                                                  P0072830
C=    NUVI = 6                                                          P0072835
      NUVI = 6                                                          P179B1
C*****    WRITE HEADING FOR SEGMENT 179                                 P1790130
      WRITE (NUVI,1790)                                                 P1790140
1790  FORMAT (1H1,1X,32HBLKDA - (179) SEVERAL BLOCK DATA/ 16X,          P1790150
     1 11HSUBPROGRAMS/ 2X, 14HASA REF. - 8.5// 9H  RESULTS)             P1790160
      WRITE (NUVI,1791)                                                 P1790170
1791  FORMAT (//28H  TEST IS SUCCESSFUL IF EACH/                        P1790180
     A28H  GROUP CONTAINS SAME VALUES)                                  P1790190
      WRITE (NUVI,1792) JXVI, JAX1I(1), JAX2I(1,2), JAX3I(1,1,2), DXVS, P1790200
     A                  DX1S(2), DX2S(1,2), DX3S(1,1,2), DXVD, DX1D(1), P1790210
     B                  DX2D(1,2), DX3D(1,1,2), DXVC, DX1C(1),DX2C(1,2),P1790220
     C                  DZ3C(1,1,2), DXVB, DX1B(1), DX2B(1,2),          P1790230
     D                  DX3B(1,1,2), JAX2I(1,3),                        P1790240
     E                  DX3B(2,2,2), DX2S(2,1)                          P1790250
1792  FORMAT (// 4(I10/)//                                              P1790260
     A            4(F12.1/)//                                           P1790270
     B            4(1PD16.1/)//                                         P1790280
     C            4(0PF6.1,F6.1/)//                                     P1790290
     D            4(L10/)//                                             P1790300
     E            3(2H  ,A2/))                                          P1790310
C*****    END OF TEST SEGMENT 179                                       P1790320
C*****  WHEN EXECUTING ONLY SEGMENT 179, THE  STOP  AND  END  CARDS     P1790330
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1790340
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1790350
C=    STOP                                                              P1790360
C=    END                                                               P1790370
      STOP                                                              P179C1
      END                                                               P179C2
C***********************************************************************P4190010
C*****                                                                  P4190020
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C*****                           BLAKD - (419)                          P4190030
C*****                                                                  P4190040
C***********************************************************************P4190050
C*****  GENERAL PURPOSE                                                 P4190060
C*****   THIS SEGMENT CONTAINS THE FIRST OF THREE BLOCK DATA SUBPROGRAMSP4190070
C*****   TO BE RUN WITH SEGMENT 179                                     P4190080
C*****   THESE SEGMENTS USE ALL THE PERMISSIBLE STATEMENTS IN A         P4190090
C*****   BLOCK DATA SUBPROGRAM. THE DATA STATEMENTS CONSIST OF ALL      P4190100
C*****   TYPES OF VARIABLES AND ARRAYS. A HOLLERITH CONSTANT IS         P4190110
C*****  ASSIGNED TO INTEGER , REAL, AND LOGICAL                         P4190120
      BLOCK DATA                                                        P4190130
      DOUBLE PRECISION DXVD, DX1D, DX2D                                 P4190140
      COMMON /BLK1/JXVI, JAX1I(2), JAX2I(3,3)                           P4190150
     A      /BLK2/ DXVS, DX1S(2), DX2S(2,2)                             P4190160
     B      /BLK3/ DXVD, DX1D(2), DX2D(2,2)                             P4190170
      INTEGER JXVI                                                      P4190180
      REAL DXVS                                                         P4190190
      DATA JXVI, JAX1I(1), JAX2I(1,2), DXVS, DX1S(2)                    P4190200
     A    ,DX2S(1,2), DXVD, DX1D(1), DX2D(1,2)/ 3 * 1                   P4190210
     B    ,3 * 2.0,3*4.0D0/,  JAX2I(1,3),DX2S(2,1)/2HHP,2HHP/           P4190220
C*****   END OF TEST SEGMENT 419                                        P4190230
      END                                                               P4190240
C***********************************************************************P4290010
C*****                                                                  P4290020
C*****                           BLBKD - (429)                          P4290030
C*****                                                                  P4290040
C***********************************************************************P4290050
C*****   TO BE RUN WITH SEGMENT 179                                     P4290060
C*****   THIS SEGMENT CONTAINS THE 2ND OF THREE BLOCK DATA SUBPROGRAMS  P4290070
C*****   TO BE RUN WITH SEGMENT 179                                     P4290080
      BLOCK DATA                                                        P4290090
      COMPLEX DXVC, DX1C, DX2C                                          P4290100
      COMMON /BLK4/ DXVC,DX1C(2), DX2C(2,2)                             P4290110
     C      /BLK5/DXVB, DX1B(2), DX2B(2,2)                              P4290120
      LOGICAL DXVB, DX1B, DX2B                                          P4290130
      DATA DXVC, DX1C(1), DX2C(1,2),DXVB, DX1B(1),DX2B(1,2)/            P4290140
     D      3 * (3.,4.), 3 *.FALSE./                                    P4290150
C*****   END OF TEST SEGMENT 429                                        P4290160
      END                                                               P4290170
C***********************************************************************P4390010
C*****                                                                  P4390020
C*****                           BLCKD - (439)                          P4390030
C*****                                                                  P4390040
C***********************************************************************P4390050
C*****   THIS SEGMENT CONTAINS THE THIRD OF THREE BLOCK DATA SUBPROGRAMSP4390060
C*****   TO BE RUN WITH SEGMENT 179                                     P4390070
      BLOCK DATA                                                        P4390080
      COMMON /BLK6/JAX3I(2,2,2),DX3S(2,2,2),DX3D(2,2,2)                 P4390090
     E      ,DZ3C(2,2,2), DX3B(2,2,2)                                   P4390100
      DOUBLE PRECISION DX3D                                             P4390110
      DIMENSION CY3C(2,2,2)                                             P4390120
      COMPLEX DZ3C,CY3C                                                 P4390130
      EQUIVALENCE (DZ3C(1,1,1), CY3C(1,1,1))                            P4390140
      LOGICAL DX3B                                                      P4390150
      DATA JAX3I(1,1,2),DX3S(1,1,2),DX3D(1,1,2),CY3C(1,1,2),DX3B(1,1,2)/P4390160
     F 1, 2.0, 4.0D0, (3.,4.),.FALSE./            ,DX3B(2,2,2)/         P4390170
     G 2HHP/                                                            P4390180
C*****   END OF TEST SEGMENT 439                                        P4390190
      END                                                               P4390200
C***********************************************************************P1800010
C*****                                                                  P1800020
C*****                       UNFRW - (180)                              P1800030
C*****                                                                  P1800040
C***********************************************************************P1800050
C*****  GENERAL PURPOSE                                         ASA REF P1800060
C*****    TEST OF UNFORMATTED READ AND WRITE STATEMENTS        7.1.3.2.4P1800070
C*****                                                         7.1.3.2.5P1800080
C*****  S P E C I F I C A T I O N S  SEGMENT 180                        P1800090
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C*****                                                                  P0013740
C*****  WHEN EXECUTING ONLY SEGMENT 180, THE SPECIFICATION STATEMENTS   P0013745
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0013750
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013755
C*****                                                                  P0013760
C=    DIMENSION CMA1S(5), CMB1S(5), AC1S(25)                            P0013765
      DIMENSION CMA1S(5), CMB1S(5), AC1S(25)                            P180A1
C*****                                                                  P0013770
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENTS.  NO INPUT TAPE.  P1800100
C*****                                                                  P0072840
C*****  WHEN EXECUTING ONLY SEGMENT 180, THE FOLLOWING STATEMENTS       P0072845
C*****  NUVI=6 AND INVI=9  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED. P0072850
C*****                                                                  P0072855
C=    NUVI = 6                                                          P0072860
C=    INVI = 9                                                          P0072865
      NUVI = 6                                                          P180B1
      INVI = 9                                                          P180B2
C*****                                                                  P0072870
      WRITE (NUVI,0180)                                                 P1800110
180   FORMAT(1H1,1X,30HUNFRW - (180) UNFORMATTED READ/ 14X,             P1800120
     122H  AND WRITE STATEMENTS//36H  ASA REFS - 7.1.3.2.4 AND 7.1.3.2.5P1800130
     2//10H  RESULTS )                                                  P1800140
C*****    HEADER FOR SEGMENT 180 WRITTEN                                P1800150
      CMAVS = 1.5E01                                                    P1800160
      CMBVS = -2.75E-0                                                  P1800170
      MCAVI = 5                                                         P1800180
      MCBVI = -10                                                       P1800190
      DPAVS = 1.02E0                                                    P1800200
      DPBVS = 9876.0E-2                                                 P1800210
      CMA1S(1) = 1.0E0                                                  P1800220
      CMA1S(2) = 2.0E0                                                  P1800230
      CMA1S(3) = 3.0E0                                                  P1800240
      CMA1S(4) = 4.0E0                                                  P1800250
      CMA1S(5) = 5.0E0                                                  P1800260
C*****    WRITE AND READ VARIABLES OF THE SAME TYPE                     P1800270
      REWIND INVI                                                       P1800280
      WRITE (INVI) CMAVS, CMBVS                                         P1800290
      WRITE (INVI) MCAVI, MCBVI                                         P1800300
      WRITE (INVI) DPAVS, DPBVS                                         P1800310
      WRITE (INVI) CMA1S                                                P1800320
      WRITE (INVI) (CMA1S(IVI), IVI = 1,5,1 )                           P1800330
      REWIND INVI                                                       P1800340
      READ (INVI) CMCVS, CMDVS                                          P1800350
      READ (INVI) MCCVI, MCDVI                                          P1800360
      READ (INVI) DPCVS, DPDVS                                          P1800370
      READ (INVI) CMB1S                                                 P1800380
      READ (INVI) (AC1S(IVI), IVI = 1,5,1 )                             P1800390
C*****    CHECK RECORDS BY SUBTRACTING CORRESPONDING VALUES.            P1800400
      CMEVS = CMAVS - CMCVS                                             P1800410
      CMFVS = CMBVS - CMDVS                                             P1800420
      MCEVI = MCAVI - MCCVI                                             P1800430
      MCFVI = MCBVI - MCDVI                                             P1800440
      DPEVS = DPAVS - DPCVS                                             P1800450
      DPFVS = DPBVS - DPDVS                                             P1800460
      ACVS = CMA1S(1) - CMB1S(1)                                        P1800470
      BCVS = CMA1S(2) - CMB1S(2)                                        P1800480
      CCVS = CMA1S(3) - CMB1S(3)                                        P1800490
      DCVS = CMA1S(4) - CMB1S(4)                                        P1800500
      FFCVS = CMA1S(5)- CMB1S(5)                                        P1800510
      CMGVS = CMA1S(1) - AC1S(1)                                        P1800520
      CMHVS = CMA1S(2) - AC1S(2)                                        P1800530
      CMIVS = CMA1S(3) - AC1S(3)                                        P1800540
      CMJVS = CMA1S(4) - AC1S(4)                                        P1800550
      CMKVS = CMA1S(5) - AC1S(5)                                        P1800560
      WRITE (NUVI,181) CMEVS, CMFVS, MCEVI, MCFVI, DPEVS, DPFVS,        P1800570
     1        ACVS, BCVS, CCVS, DCVS, FFCVS, CMGVS, CMHVS, CMIVS, CMJVS,P1800580
     2        CMKVS                                                     P1800590
0181  FORMAT (//2(F20.10/),2(I19/),7(F20.10/))                          P1800600
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C*****    READ AND WRITE VARIABLES OF DIFFERENT TYPES                   P1800610
      REWIND INVI                                                       P1800620
      WRITE (INVI) CMAVS, MCAVI                                         P1800630
      WRITE (INVI) CMA1S(1), CMA1S(2), CMBVS, MCBVI                     P1800640
      WRITE (INVI) CMA1S(3), CMA1S(4), CMA1S(5), DPAVS, DPBVS           P1800650
      REWIND INVI                                                       P1800660
      READ (INVI) CMCVS, MCCVI                                          P1800670
      READ (INVI) CMB1S(1), CMB1S(2), CMDVS, MCDVI                      P1800680
      READ (INVI) CMB1S(3), CMB1S(4), CMB1S(5), DPCVS, DPDVS            P1800690
      CMEVS = CMAVS - CMCVS                                             P1800700
      CMFVS = CMBVS - CMDVS                                             P1800710
      MCEVI = MCAVI - MCCVI                                             P1800720
      MCFVI = MCBVI - MCDVI                                             P1800730
      DPEVS = DPAVS - DPCVS                                             P1800740
      DPFVS = DPBVS - DPDVS                                             P1800750
      CMGVS = CMA1S(1) - CMB1S(1)                                       P1800760
      CMHVS = CMA1S(2) - CMB1S(2)                                       P1800770
      CMIVS = CMA1S(3) - CMB1S(3)                                       P1800780
      CMJVS = CMA1S(4) -CMB1S(4)                                        P1800790
      CMKVS = CMA1S(5) - CMB1S(5)                                       P1800800
      WRITE (NUVI,0182) CMEVS, CMFVS, MCEVI, MCFVI, DPEVS, DPFVS, CMGVS,P1800810
     1 CMHVS, CMIVS, CMJVS, CMKVS                                       P1800820
0182  FORMAT (//2(F20.10/),2(I19/),7(F20.10/))                          P1800830
C*****    TEST UNFORMATTED READ WITH NO LIST                            P1800840
      REWIND INVI                                                       P1800850
      WRITE (INVI) CMAVS, MCAVI                                         P1800860
      WRITE (INVI) CMA1S                                                P1800870
      WRITE (INVI) CMBVS, MCBVI                                         P1800880
      WRITE (INVI) CMA1S(5),CMA1S(4),CMA1S(3),CMA1S(2),CMA1S(1)         P1800890
C*****    ENDFILE CAN NOT BE TESTED, BUT INCLUDED FOR ACCEPTANCE AS     P1800900
C*****    A STATEMENT.                                                  P1800910
      ENDFILE INVI                                                      P1800920
      REWIND INVI                                                       P1800930
C*****CHECK THAT A RECORD IS READ WHEN NO LIST IS SUPPLIED BY COMPARING P1800940
C***** VALUES OF THE THIRD RECORD                                       P1800950
      READ (INVI) CMCVS, MCCVI                                          P1800960
      READ (INVI)                                                       P1800970
      READ (INVI) CMDVS, MCDVI                                          P1800980
      CMEVS = CMAVS - CMCVS                                             P1800990
      CMFVS = CMBVS - CMDVS                                             P1801000
      MCEVI = MCAVI - MCCVI                                             P1801010
      MCFVI = MCBVI - MCDVI                                             P1801020
      WRITE (NUVI, 0183)  CMEVS, CMFVS, MCEVI, MCFVI                    P1801030
  183 FORMAT(//2(F20.10/),2(I19/))                                      P1801040
      WRITE (NUVI,0184)                                                 P1801050
  184 FORMAT(37H0 ALL ABOVE ANSWERS SHOULD BE ZERO IF /                 P1801060
     1       37H  THE READ AND WRITE RECORDS COMPARE. )                 P1801070
      REWIND INVI                                                       P1801080
C*****    END OF TEST SEGMENT 180                                       P1801090
C*****  WHEN EXECUTING ONLY SEGMENT 180, THE  STOP  AND  END           P1801100
C*****  CARDS WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE C=          P1801110
C*****  IN COLUMNS  1  AND  2  REMOVED.                                P1801120
C=    STOP                                                              P1801130
C=    END                                                               P1801140
      STOP                                                              P180C1
      END                                                               P180C2
C***********************************************************************P1820010
C*****                                                                  P1820020
C*****                           BACUP (182)                            P1820030
C*****                                                                  P1820040
C****** ****************************************************************P1820050
C*****  GENERAL PURPOSE                                         ASA REF P1820060
C*****    WRITE A BLOCK, 1024 WORDS IN LENGTH, UNFORMATTED,    7.1.3.2.5P1820070
C*****    TO TAPE,BACKSPACE, READ TO MEMORY                    7.1.3.3.2P1820080
C*****                                                         7.1.3.2.4P1820090
C*****  S P E C I F I C A T I O N S  SEGMENT 182                        P1820100
C*****                                                                  P0013780
C*****  WHEN EXECUTING ONLY SEGMENT 182, THE SPECIFICATION STATEMENTS   P0013785
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C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0013790
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013795
C*****                                                                  P0013800
C=    DIMENSION IV1I(1024)                                              P0013805
      DIMENSION IV1I(1024)                                              P182A1
C*****                                                                  P0013810
C*****  O U T P U T   T A P E  ASSIGNMENT STATEMENTS.  NO INPUT TAPE.   P1820110
C*****                                                                  P0072880
C*****  WHEN EXECUTING ONLY SEGMENT 182, THE FOLLOWING STATEMENTS       P0072885
C*****  NUVI=6 ANO IRVI=9 MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVED.  P0072890
C*****                                                                  P0072895
C=    NUVI = 6                                                          P0072900
C=    INVI = 9                                                          P0072905
      NUVI = 6                                                          P182B1
      INVI = 9                                                          P182B2
C*****                                                                  P0072910
1820  FORMAT(1H1,1X,28HBACUP - (182) BACKSPACE TAPE//2X,18HASA REF. 7.1.P1820120
     33.3.2//9H  RESULTS)                                               P1820130
      WRITE(NUVI,1820)                                                  P1820140
C*****  HEADER FOR SEGMENT 182 WRITTEN                                  P1820150
C*****                                                                  P1820160
      REWIND INVI                                                       P1820170
C*****  CREATE A LIST, 1024 WORDS IN LENGTH, CONTAINING                 P1820180
C*****  THE INTEGERS 1 TO 1024, ONE INTEGER PER WORD.                   P1820190
      ISVI = 0                                                          P1820200
      MRRVI = 1                                                         P1820210
1821  ISVI = ISVI + 1                                                   P1820220
      IV1I(ISVI) = ISVI                                                 P1820230
      IF (ISVI - 1024) 1821, 1822, 1823                                 P1820240
C*****  WRITE THE LIST TO AN INTERMEDIATE TAPE                          P1820250
1822  WRITE (INVI) IV1I                                                 P1820260
      WRITE(NUVI,1828) MRRVI, (IV1I(JCVI), JCVI=1,9),                   P1820270
     1 (IV1I(KCVI),KCVI=1016,1024)                                      P1820280
C*****  CHANGE MEMORY VALUES TO 5 TIMES THE ORIGINAL VALUES             P1820290
      MRRVI = 2                                                         P1820300
      ISVI = 0                                                          P1820310
1825  ISVI = ISVI + 1                                                   P1820320
      IV1I(ISVI) = 5 * ISVI                                             P1820330
      IF (ISVI - 1024) 1825,1826,1823                                   P1820340
1826  BACKSPACE  INVI                                                   P1820350
C*****  WRITE THE CHANGEO VALUES                                        P1820360
      WRITE(NUVI,1828) MRRVI, (IV1I(JCVI), JCVI=1,9),                   P1820370
     1 (IV1I(KCVI),KCVI=1016,1024)                                      P1820380
      MRRVI = 3                                                         P1820390
C*****  READ INTERMEDIATE TAPE WHICH HAS BEEN BACKSPACEO                P1820400
      READ(INVI) IV1I                                                   P1820410
      REWIND INVI                                                       P1820420
C*****  WRITE INITIAL VALUES FROM BACKSPACED TAPE.                      P1820430
      WRITE(NUVI,1828) MRRVI,(IV1I(LVI), LVI=1,9),(IV1I(KVI),KVI=       P1820440
     1   1016, 1024)                                                    P1820450
1823  WRITE (NUVI,1829)                                                 P1820460
1828  FORMAT(//7H  GROUP,I3,3(/2X,3(I6)), 3(/2X,3(I6)))                 P1820470
1829  FORMAT(//2X,33HGROUPS 1 ANO 3 SHOULO BE THE SAME/                 P1820480
     I  30H  ANO GROUP 2, 5 TIMES GROUP 1)                              P1820490
C*****    ENO OF TEST SEGMENT 182                                       P1820500
C*****  WHEN EXECUTING ONLY SEGMENT 182, THE  STOP  ANO  ENO            P1820510
C*****  CARDS WHICH APPEAR AS COMMENT CAROS, MUST HAVE THE C=           P1820520
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1820530
C=    STOP                                                              P1820540
C=    END                                                               P1820550
      STOP                                                              P182C1
      END                                                               P182C2
C***********************************************************************P1900010
C*****                                                                  P1900020
C*****                             DOTRM - (190)                        P1900030
C*****                                                                  P1900040
C***********************************************************************P1900050
C*****                                                                  P1900060
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C*****  GENERAL PURPOSE                                         ASA REF P1900070
C*****    DO LOOPS TESTED WITH ALL ALLOWABLE                    7.1.2.8 P1900080
C*****    TERMINAL STATEMENTS (I/O TESTED SEPARATELY)                   P1900090
C*****    CONTINUE, ASSIGN, LOGICAL IF                                  P1900100
C*****  RESTRICTIONS OBSERVED                                           P1900110
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/23P1900120
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1900130
C*****    THE DO AND IS IN THE SAME PROGRAM UNIT                        P1900140
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1900150
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1900160
C*****    DO STATEMENT                                                  P1900170
C*****  * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO         7.1.2.8.2/54P1900180
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.2/01P1900190
C*****    ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                P1900200
C*****  * CONTROL IS NEVER PASSED INTO RANGE OF DO FROM     7.1.2.8.2/44P1900210
C*****    OUTSIDE ITS RANGE                                             P1900220
C*****                                                                  P1900230
C*****  S P E C I F I C A T I O N S  SEGMENT 190                        P1900240
C*****                                                                  P0013820
C*****  WHEN EXECUTING ONLY SEGMENT 190, THE SPECIFICATION STATEMENTS   P0013825
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0013830
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013835
C*****                                                                  P0013840
C=    DIMENSION IAC1I(5)                                                P0013845
      DIMENSION IAC1I(5)                                                P190A1
C*****                                                                  P0013850
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.      P1900250
C*****                                                                  P0072920
C*****  WHEN EXECUTING ONLY SEGMENT 190, THE FOLLOWING STATEMENT        P0072925
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0072930
C*****                                                                  P0072935
C=    NUVI = 6                                                          P0072940
      NUVI = 6                                                          P190B1
C*****                                                                  P0072945
      WRITE (NUVI,8906)                                                 P1900260
8906  FORMAT (1H1,1X,25HDOTRM - (190) DO TERMINAL//2X,                  P1900270
     -17HASA REF - 7.1.2.8//2X,7HRESULTS)                               P1900280
C*****    HEADER FOR SEGMENT 190                                        P1900290
C*****    CONTINUE WITH EXPLICIT INCREMENT**********************7.1.2.8 P1900300
      WRITE (NUVI,8905)                                                 P1900310
8905  FORMAT   (//2X,23HTEST1 CONTINUE EXPLICIT)                        P1900320
C*****    HEADER FOR CONTINUE EXPLICIT TEST                             P1900330
      DO 1901 JACVI = 1,4,1                                             P1900340
           IAC1I(JACVI) = JACVI                                         P1900350
1901  CONTINUE                                                          P1900360
      IF (IAC1I(1)-1) 1909,1902,1909                                    P1900370
1902  IF (IAC1I(2)-2) 1909,1903,1909                                    P1900380
1903  IF (IAC1I(3)-3) 1909,1904,1909                                    P1900390
1904  IF (IAC1I(4)-4) 1909,1905,1909                                    P1900400
C*****    WRITE OUT ERROR MESSAGE                                       P1900410
1909  MRRVI=1                                                           P1900420
      WRITE (NUVI,8904)MRRVI                                            P1900430
8904  FORMAT    (/2X,6H**TEST,I1,1X,17HINDICATES ERROR**)               P1900440
C*****    ERROR  FOR CONTINUE EXPLICIT TEST                             P1900450
      GO TO 8909                                                        P1900460
C*****    NO ERROR                                                      P1900470
C*****    WRITE OUT CONTINUE EXPLICIT TEST IS SUCCESS                   P1900480
1905  MRRVI=1                                                           P1900490
      WRITE (NUVI,8903)MRRVI                                            P1900500
8903  FORMAT    (/2X,6H**TEST,I1,1X,12HSUCCESSFUL**)                    P1900510
C*****   SUCCESS FOR CONTINUE EXPLICIT TEST                             P1900520
C*****    CONTINUE TERMINAL IMPLIED TEST*************************7.1.2.8 P1900530
      WRITE (NUVI,8902)                                                 P1900540
8902  FORMAT   (//2X,22HTEST2 CONTINUE IMPLIED)                         P1900550
C*****    HEADER FOR CONTINUE IMPLIED TEST                              P1900560
8909  LCCVI=2                                                           P1900570
      DO  7900   KBCVI = LCCVI,4                                        P1900580
7900  IAC1I(KBCVI) = KBCVI + 1                                          P1900590
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C*****    CHECK VALUES IN IAC1I ARRAY                                 P1900600
      IF (IAC1I(2)-3) 7909,8900,7909                                  P1900610
8900  IF (IAC1I(3)-4) 7909,8901,7909                                  P1900620
8901  IF (IAC1I(4)-5) 7909,7901,7909                                  P1900630
7909  MRRVI=2                                                         P1900640
      WRITE (NUVI,8904)MRRVI                                          P1900650
C*****    ERROR IN CONTINUE IMPLIED TEST                              P1900660
      GO TO 8908                                                      P1900670
C*****    WRITE OUT CONTINUE IMPLIED IS SUCCESS                       P1900680
7901  MRRVI=2                                                         P1900690
      WRITE (NUVI,8903)MRRVI                                          P1900700
C*****    SUCCESS IN CONTINUE IMPLIED TEST                            P1900710
C*****    ASSIGN TERMINAL TEST **********************************7.1.2.8 P1900720
      WRITE (NUVI,9908)                                               P1900730
9908  FORMAT    (//2X,12HTEST3 ASSIGN)                                P1900740
C*****    HEADER FOR ASSIGN TEST                                      P1900750
8908  MDCVI = 0                                                       P1900760
      ASSIGN 7904 TO JFCVI                                            P1900770
      DO  7902  NECVI = 2,5,2                                         P1900780
          MDCVI = MDCVI +1                                            P1900790
7902  ASSIGN 7903 TO JFCVI                                            P1900800
      GO TO JFCVI, (7903,7904,7904)                                   P1900810
C*****    AN ERROR IN ASSIGN TEST                                     P1900820
7904  MRRVI=3                                                         P1900830
      WRITE (NUVI,8904)MRRVI                                          P1900840
C*****    ERROR FOR ASSIGN TEST                                       P1900850
      GO TO 8907                                                      P1900860
7903  IF (MDCVI-2) 7904,7905,7904                                     P1900870
C*****    ASSIGN TEST IS SUCCESS                                      P1900880
7905  MRRVI=3                                                         P1900890
      WRITE (NUVI,8903)MRRVI                                          P1900900
C*****    SUCCESS FOR ASSIGN TEST                                     P1900910
C*****    LOGICAL IF TERMINAL TEST********************************7.1.2.8 P1900920
      WRITE (NUVI,9905)                                               P1900930
9905  FORMAT    (//2X,16HTEST4 LOGICAL IF)                            P1900940
C*****    HEADER FOR LOGICAL IF TEST                                  P1900950
8907  KGCVI = 1                                                       P1900960
      LHCVI = 3                                                       P1900970
      ASSIGN 7908 TO KCVI                                             P1900980
      DO  7906  JCVI = 1,3                                            P1900990
      KGCVI = KGCVI +1                                                P1901000
7906  IF (KGCVI .EQ. LHCVI) ASSIGN 7907 TO KCVI                       P1901010
      GO TO KCVI, (7908,7907,7908)                                    P1901020
C*****    TEST IS SUCCESS                                             P1901030
7907  MRRVI=4                                                         P1901040
      WRITE (NUVI,8903)MRRVI                                          P1901050
C*****    SUCCESS FOR LOGICAL IF TEST                                 P1901060
      GO TO 9902                                                      P1901070
C*****    LOGICAL IF IS NOT SUCCESS                                   P1901080
7908  MRRVI=4                                                         P1901090
      WRITE (NUVI,8904)MRRVI                                          P1901100
C*****    ERROR FOR LOGICAL IF TEST                                   P1901110
9902  CONTINUE                                                        P1901120
C*****    END OF TEST SEGMENT 190                                     P1901130
C*****  WHEN EXECUTING ONLY SEGMENT 190, THE  STOP  AND  END  CARDS   P1901140
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=               P1901150
C*****  IN COLUMNS  1  AND  2  REMOVED.                               P1901160
C=    STOP                                                            P1901170
C=    END                                                             P1901180
      STOP                                                            P190C1
      END                                                             P190C2
C*********************************************************************P1910010
C*****                                                                P1910020
C*****                        DOLMT - (191)                           P1910030
C*****                                                                P1910040
C*********************************************************************P1910050
C*****  GENERAL PURPOSE                                       ASA REF P1910060
C*****    TEST DO LOOPS WHERE                              7.1.2.8/18P1910070
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C*****         INITIAL                                                  P1910080
C*****         TERMINAL                                                 P1910090
C*****         INCREMENT VALUES                                         P1910100
C*****    ARE COMPUTED AND SET AT OBJECT TIME                           P1910110
C*****  RESTRICTIONS OBSERVED                                           P1910120
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1910130
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1910140
C*****    THE DO AND IS IN THE SAME PROGRAM UNIT                        P1910150
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1910160
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1910170
C*****    DO STATEMENT                                                  P1910180
C*****  * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO         7.1.2.8.2/54P1910190
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.2/01P1910200
C*****    ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                P1910210
C*****  * CONTROL IS NEVER PASSED INTO RANGE OF DO FROM     7.1.2.8.2/44P1910220
C*****    OUTSIDE ITS RANGE                                             P1910230
C*****                                                                  P1910240
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.      P1910250
C*****                                                                  P0072950
C*****  WHEN EXECUTING ONLY SEGMENT 191, THE FOLLOWING STATEMENT        P0072955
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0072960
C*****                                                                  P0072965
C=    NUVI = 6                                                          P0072970
      NUVI = 6                                                          P191B1
C*****                                                                  P0072975
      WRITE (NUVI,1914)                                                 P1910260
1914  FORMAT (1H1,1X,27HDOLMT - (191) DO SET LIMITS//2X,                P1910270
     - 18HASA REF. - 7.1.2.8//2X,7HRESULTS)                             P1910280
C*****    HEADER FOR SEGMENT 191 WRITTEN                                P1910290
      JACVI = 1                                                         P1910300
      KBCVI = 3                                                         P1910310
      LCCVI = 1                                                         P1910320
      NECVI = 0                                                         P1910330
      DO  1911 MDCVI = JACVI, KBCVI, LCCVI                              P1910340
        NECVI = NECVI + JACVI + KBCVI + MDCVI + LCCVI                   P1910350
1911  CONTINUE                                                          P1910360
      IF (NECVI-21) 1913,1912,1913                                      P1910370
C*****    ERROR                                                         P1910380
1913  WRITE (NUVI,1915)                                                 P1910390
1915  FORMAT    (/2X,24H**TEST INDICATES ERROR**//2X,10H**********)     P1910400
C*****    DOLMT TEST FAILS,LIMIT VALUE SET INCORRECTLY                  P1910410
      GO TO 1917                                                        P1910420
C*****    CORRECT                                                       P1910430
1912  WRITE (NUVI,1916)                                                 P1910440
1916  FORMAT    (/2X,19H**TEST SUCCESSFUL**)                            P1910450
C*****    DOLMT TEST IS SUCCESSFUL                                      P1910460
1917  CONTINUE                                                          P1910470
C*****    END OF TEST SEGMENT 191                                       P1910480
C*****  WHEN EXECUTING ONLY SEGMENT 191, THE  STOP  AND  END  CARDS     P1910490
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1910500
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1910510
C=    STOP                                                              P1910520
C=    END                                                               P1910530
      STOP                                                              P191C1
      END                                                               P191C2
C***********************************************************************P1920010
C*****                                                                  P1920020
C*****                       DONSC - (192)                              P1920030
C*****                                                                  P1920040
C***********************************************************************P1920050
C*****  GENERAL PURPOSE                                         ASA REF P1920060
C*****    TEST NESTED DO LOOPS                                7.1.2.8/28P1920070
C*****    WITH 2, 3, 4, 5 LEVELS                                        P1920080
C*****  SPECIAL CONSIDERATION                                           P1920090
C*****    5 LEVELS ARBITRARILY ASSIGNED AS MINIMUM REQUIREMENT          P1920100
C*****  RESTRICTIONS OBSERVED                                           P1920110
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1920120
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1920130
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C*****     THE DO AND IS IN THE SAME PROGRAM UNIT                         P1920140
C*****   * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A             7.1.2.8/07P1920150
C*****     GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR           7.1.2.8/10P1920160
C*****     DO STATEMENT                                                   P1920170
C*****   * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO           7.1.2.8.2/54P1920180
C*****   * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN        7.1.2.8.2/01P1920190
C*****     ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                 P1920200
C*****                                                                    P1920210
C*****  S P E C I F I C A T I O N S  SEGMENT 192                          P1920220
C*****                                                                    P0013860
C*****  WHEN EXECUTING ONLY SEGMENT 192, THE SPECIFICATION STATEMENTS     P0013865
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                    P0013870
C*****  IN COLUMNS  1  AND  2  REMOVED.                                   P0013875
C*****                                                                    P0013880
C=    INTEGER MCA3I(2,3,3)                                                P0013885
      INTEGER MCA3I(2,3,3)                                                P192A1
C*****                                                                    P0013890
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.        P1920230
C*****                                                                    P0072980
C*****  WHEN EXECUTING ONLY SEGMENT 192, THE FOLLOWING STATEMENT          P0072985
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.            P0072990
C*****                                                                    P0072995
C=    NUVI = 6                                                            P0073000
      NUVI = 6                                                            P192B1
C*****                                                                    P0073005
      WRITE (NUVI,8920)                                                   P1920240
8920  FORMAT (1H1,1X,26HDONSC - (192) NESTED LOOPS// 2X,                  P1920250
     -18HASA REF. - 7.1.2.8//2X,7HRESULTS)                                P1920260
C*****     HEADER FOR SEGMENT 192 WRITTEN                                 P1920270
C*****     TWO LEVELS OF NESTING*******************************************P1920280
      MRRVI=2                                                             P1920290
      WRITE (NUVI,8921)MRRVI                                              P1920300
8921  FORMAT   (//2X,I1,1X,17HLEVELS OF NESTING)                          P1920310
C*****     HEADER FOR TWO LEVELS                                          P1920320
      JACVI = 0                                                           P1920330
      DO  1922 KBCVI = 1, 2, 1                                            P1920340
      JACVI = KBCVI*3 + JACVI                                             P1920350
        DO  1921  LCCVI = 1,5,  2                                         P1920360
        JACVI = JACVI + LCCVI                                             P1920370
1921    CONTINUE                                                          P1920380
1922  CONTINUE                                                            P1920390
C*****     TEST JACVI FOR VALUE OF 27                                     P1920400
      IF (JACVI-27) 1924,1923,1924                                        P1920410
C*****     CORRECT                                                        P1920420
1923  WRITE (NUVI,8922)                                                   P1920430
8922  FORMAT  (2X,19H**TEST SUCCESSFUL**)                                 P1920440
C*****     TWO LEVELS OF NESTING IS CORRECT                               P1920450
      GO TO 7927                                                          P1920460
C*****     ERROR                                                          P1920470
1924  WRITE (NUVI,8923)                                                   P1920480
8923  FORMAT  (2X,24H**TEST INDICATES ERROR**)                            P1920490
C*****     TWO LEVELS OF NESTING IN ERROR                                 P1920500
C*****     THREE LEVELS OF NESTING*****************************************P1920510
7927  MRRVI=3                                                             P1920520
      WRITE (NUVI,8921)MRRVI                                              P1920530
C*****     HEADER FOR THREE LEVELS                                        P1920540
      MDCVI = 0                                                           P1920550
      DO  1927  LCCVI = 6,7                                               P1920560
        DO 1926  KBCVI = 8,10,2                                           P1920570
          DO 1925  JACVI = 1,3,1                                          P1920580
          MDCVI = MDCVI + JACVI + KBCVI + LCCVI                           P1920590
1925      CONTINUE                                                        P1920600
1926    CONTINUE                                                          P1920610
1927  CONTINUE                                                            P1920620
C*****     TEST MDCVI FOR VALUE OF 210                                    P1920630
      IF (MDCVI - 210) 1928,1929,1928                                     P1920640
C*****     ERROR                                                          P1920650
1928  WRITE (NUVI,8923)                                                   P1920660
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C*****    THREE LEVELS OF NESTING IN ERROR                              P1920670
      GO TO 7928                                                        P1920680
C*****    CORRECT                                                       P1920690
1929  WRITE (NUVI,8922)                                                 P1920700
C*****    THREE LEVELS OF NESTING IS CORRECT                            P1920710
C*****    FOUR LEVELS OF NESTING****************************************P1920720
7928  MRRVI=4                                                           P1920730
      WRITE (NUVI,8921)MRRVI                                            P1920740
C*****    HEADER FOR FOUR LEVELS                                        P1920750
      IHDVI = 0                                                         P1920760
      IGDVI = 0                                                         P1920770
      IFDVI = 0                                                         P1920780
      IEDVI = 0                                                         P1920790
      ICVI = 1                                                          P1920800
      DO  7920  MDCVI = 2,3                                             P1920810
      IHDVI = IHDVI + MDCVI + IEDVI                                     P1920820
        DO 7920  LCCVI = 3,5,3                                          P1920830
        IGDVI = IGDVI + LCCVI + IHDVI                                   P1920840
          DO 7920 KBCVI = 1,2,ICVI                                      P1920850
          IFDVI = IFDVI + KBCVI + IGDVI                                 P1920860
            DO 7920  JACVI = 4,5,2                                      P1920870
            IEDVI = IEDVI + JACVI + IFDVI                               P1920880
7920  CONTINUE                                                          P1920890
C*****    TEST IEDVI FOR VALUE OF 185                                   P1920900
      IF (IEDVI - 185)  7921,7922,7921                                  P1920910
C*****    ERROR                                                         P1920920
7921  WRITE (NUVI,8923)                                                 P1920930
C*****    FOUR LEVELS OF NESTING IN ERROR                               P1920940
      GO TO 7929                                                        P1920950
C*****    CORRECT                                                       P1920960
7922  WRITE (NUVI,8922)                                                 P1920970
C*****    FOUR LEVELS OF NESTING IS CORRECT                             P1920980
C*****    FIVE LEVELS OF NESTING****************************************P1920990
7929  MRRVI=5                                                           P1921000
      WRITE (NUVI,8921)MRRVI                                            P1921010
C*****    HEADER FOR FIVE LEVELS                                        P1921020
      IGDVI = 0                                                         P1921030
      DO  7923  NECVI = 10,11,1                                         P1921040
        DO 7923 MDCVI = 4,5,1                                           P1921050
          DO 7924 LCCVI = 1,2,3                                         P1921060
            DO 7924 KBCVI = 6, 8, 4                                     P1921070
              DO 7924 JACVI = 1,3,2                                     P1921080
              IGDVI=IGDVI+JACVI-KBCVI+LCCVI-MDCVI+NECVI                 P1921090
7924  CONTINUE                                                          P1921100
7923  CONTINUE                                                          P1921110
C*****    TEST IGDVI FOR VALUE OF 24                                    P1921120
      IF (IGDVI - 24)  7925, 7926,7925                                  P1921130
C*****    ERROR                                                         P1921140
7925  WRITE (NUVI,8923)                                                 P1921150
C*****    FIVE LEVELS IN ERROR                                          P1921160
      GO TO 9923                                                        P1921170
7926  WRITE (NUVI,8922)                                                 P1921180
C*****    FIVE LEVELS CORRECT                                           P1921190
C*****  CONTROL VARIABLES FOR 3 DO LOOPS USED IN SUBSCRIPT EXPRESSIONS  P1921200
C*****  FOR A 3 DIMENSIONAL ARRAY                                       P1921210
9923  WRITE(NUVI, 9920)                                                 P1921220
9920  FORMAT(//2X,34HCONTROL VARIABLE USED IN SUBSCRIPT )               P1921230
      IVI = 1                                                           P1921240
      KVI = 0                                                           P1921250
8924  KVI = KVI + 1                                                     P1921260
      JVI = 0                                                           P1921270
8925  JVI = JVI + 1                                                     P1921280
      MCA3I(IVI,JVI,KVI) = IVI  + 2*(JVI-1)+ 6*(KVI-1)                  P1921290
      MCA3I(IVI+1,JVI,KVI) = IVI+1 +2*(JVI-1)+6*(KVI-1)                 P1921300
      IF(JVI-3) 8925,8926,8929                                          P1921310
8926  IF(KVI-3)8924,8927,8929                                           P1921320
8927  IIVI = 1                                                          P1921330
      DO 8928 KVI =1,3                                                  P1921340
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       DO 8928  JVI = 1,3                                               P1921350
         DO 8928  IVI = 1,2                                             P1921360
      IAVI =MCA3I(IVI,JVI,KVI) - IIVI                                   P1921370
      IF (IAVI) 8929, 8928, 8929                                        P1921380
8928  IIVI = IIVI + 1                                                   P1921390
      WRITE (NUVI, 8922)                                                P1921400
      GO TO 9921                                                        P1921410
8929  WRITE (NUVI, 8923)                                                P1921420
9921  CONTINUE                                                          P1921430
C*****    END OF TEST SEGMENT 192                                       P1921440
C*****  WHEN EXECUTING ONLY SEGMENT 192, THE  STOP  AND  END  CARDS     P1921450
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1921460
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1921470
C=    STOP                                                              P1921480
C=    END                                                               P1921490
      STOP                                                              P192C1
      END                                                               P192C2
C***********************************************************************P1930010
C*****                                                                  P1930020
C*****                      DONSI - (193)                               P1930030
C*****                                                                  P1930040
C***********************************************************************P1930050
C*****  GENERAL PURPOSE                                         ASA REF P1930060
C*****    TESTS INCOMPLETE DO LOOP                          7.1.2.8.1/19P1930070
C*****  RESTRICTIONS OBSERVED                                           P1930080
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1930090
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1930100
C*****    THE DO AND IS IN THE SAME PROGRAM UNIT                        P1930110
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1930120
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1930130
C*****    DO STATEMENT                                                  P1930140
C*****  * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO         7.1.2.8.1/54P1930150
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.1/01P1930160
C*****    ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                P1930170
C*****                                                                  P1930180
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT. NO INPUT TAPE.    P1930190
C*****                                                                  P0073010
C*****  WHEN EXECUTING ONLY SEGMENT 193, THE FOLLOWING STATEMENT        P0073015
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073020
C*****                                                                  P0073025
C=    NUVI = 6                                                          P0073030
      NUVI = 6                                                          P193B1
C*****                                                                  P0073035
      WRITE (NUVI,1935)                                                 P1930200
1935  FORMAT (1H1,1X,27HDONSI - (193) INCOMPLETE DO//2X,                P1930210
     - 18HASA REF. - 7.1.2.8//2X,7HRESULTS)                             P1930220
C*****    HEADER FOR SEGMENT 193 WRITTEN                                P1930230
      KBCVI = 0                                                         P1930240
      DO  1931  JACVI = 1,5,1                                           P1930250
      KBCVI = KBCVI + JACVI                                             P1930260
      IF(KBCVI - 6) 1931, 1930, 1931                                    P1930270
1930  GO TO 1932                                                        P1930280
1931  CONTINUE                                                          P1930290
C*****    ERROR EXIT                                                    P1930300
      WRITE (NUVI,1936)                                                 P1930310
1936  FORMAT (1H0,2X,28H**INCOMPLETE LOOP IN ERROR**)                   P1930320
C*****   INCOMPLETE LOOP TEST IN ERROR                                  P1930330
      GO TO 1937                                                        P1930340
C*****    TEST JACVI FOR VALUE OF 3                         7.1.2.8.1/21P1930350
1932  IF (JACVI - 3) 1933,1934,1933                                     P1930360
C*****    ERROR IN INDUCTION VARIABLE                                   P1930370
1933  WRITE (NUVI,1938)                                                 P1930380
1938  FORMAT (1H0,2X,31H**INDUCTION VARIABLE IN ERROR**)                P1930390
C*****    INDUCTION VARIABLE SET INCORRECTLY OUTSIDE LOOP               P1930400
      GO TO 1937                                                        P1930410
1934  WRITE (NUVI,1939)                                                 P1930420
1939  FORMAT (1H0,1X,30H**INCOMPLETE LOOP SUCCESSFUL**)                 P1930430
C*****    INCOMPLETE LOOP TEST SUCCESS                                  P1930440
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1937  CONTINUE                                                          P1930450
C*****    END OF TEST SEGMENT 193                                       P1930460
C*****  WHEN EXECUTING ONLY SEGMENT 193, THE  STOP  AND  END  CARDS     P1930470
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1930480
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1930490
C=    STOP                                                              P1930500
C=    END                                                               P1930510
      STOP                                                              P193C1
      END                                                               P193C2
C***********************************************************************P1940010
C*****                                                                  P1940020
C*****                       DONSX - (194)                              P1940030
C*****                                                                  P1940040
C***********************************************************************P1940050
C*****  GENERAL PURPOSE                                         ASA REF P1940060
C*****    TESTS EXTENDED RANGE OF DO LOOP VARIABLE             7.1.2.8.2P1940070
C*****  RESTRICTIONS OBSERVED                                           P1940080
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1940090
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1940100
C*****    THE DO AND IS IN THE SAME PROGRAM UNIT                        P1940110
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1940120
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1940130
C*****    DO STATEMENT                                                  P1940140
C*****  * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO         7.1.2.8.2/54P1940150
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.2/01P1940160
C*****    ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                P1940170
C*****  * THE EXTENDED RANGE OF A DO DOES NOT CONTAIN A     7.1.2.8.2/48P1940180
C*****    DO OF THE SAME PROGRAM UNIT THAT HAS AN                       P1940190
C*****    EXTENDED RANGE.                                               P1940200
C*****                                                                  P1940210
C*****  S P E C I F I C A T I O N S  SEGMENT 194                        P1940220
C*****                                                                  P0013900
C*****  WHEN EXECUTING ONLY SEGMENT 194, THE SPECIFICATION STATEMENTS   P0013905
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0013910
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0013915
C*****                                                                  P0013920
C=    DIMENSION IAC1I(5)                                                P0013925
C=    INTEGER I3I(2,2,2)                                                P0013930
      DIMENSION IAC1I(5)                                                P194A1
      INTEGER I3I(2,2,2)                                                P194A2
C*****                                                                  P0013935
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.      P1940230
C*****                                                                  P0073040
C*****  WHEN EXECUTING ONLY SEGMENT 194, THE FOLLOWING STATEMENT        P0073045
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073050
C*****                                                                  P0073055
C=    NUVI = 6                                                          P0073060
      NUVI = 6                                                          P194B1
C*****                                                                  P0073065
      WRITE (NUVI,8944)                                                 P1940240
8944  FORMAT (1H1,1X,31HDONSX - (194) EXTENDED DO RANGE//2X,            P1940250
     120HASA REF. - 7.1.2.8.2//2X,7HRESULTS)                            P1940260
C*****    HEADER FOR SEGMENT 194 WRITTEN                                P1940270
C*****    EXTENDED RANGE FROM SINGLE LEVEL******************************P1940280
      MRRVI=1                                                           P1940290
      WRITE (NUVI,8942)MRRVI                                            P1940300
8942  FORMAT (//2X,26HEXTENDED RANGE FROM LEVEL ,I1)                    P1940310
C*****    HEADER FOR SINGLE LEVEL WRITTEN                               P1940320
      DO  1941  JACVI = 1,4,2                                           P1940330
      IAC1I(JACVI) = JACVI                                              P1940340
      GO TO 1942                                                        P1940350
1943  IF(JACVI-1) 1945,1941,1945                                        P1940360
1941  CONTINUE                                                          P1940370
      GO TO 1949                                                        P1940380
C*****    TEST JACVI FOR VALUE OF 1                                     P1940390
1942  IF (JACVI - 1) 1946,1943,1946                                     P1940400
C*****    TEST IAC1I(1) AND IAC1I(3) FOR VALUES OF 1 AND 3              P1940410
1946  IF (IAC1I(1)-1) 1947,7946,1947                                    P1940420
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7946  IF (IAC1I(3)-3) 1947,1943,1947                                    P1940430
C*****    ERROR                                                         P1940440
1947  WRITE (NUVI,7947)                                                 P1940450
7947  FORMAT (/2X,24H**TEST INDICATES ERROR**)                          P1940460
C*****    ERROR IN SETTING OF IAC1I ARRAY, LOOP NOT WORKING             P1940470
      GO TO 8940                                                        P1940480
C*****    TEST JACVI FOR VALUE OF 3                                     P1940490
1945  IF (JACVI - 3) 1948,1941,1948                                     P1940500
C*****    ERROR                                                         P1940510
1948   WRITE (NUVI,7947)                                                P1940520
C*****    ERROR IN SETTING OF INDUCTION VARIABLE                        P1940530
      GO TO 8940                                                        P1940540
1949  WRITE (NUVI,7949)                                                 P1940550
7949  FORMAT (/2X,19H**TEST SUCCESSFUL**)                               P1940560
C*****    EXTENDED RANGE SUCCESS FOR SINGLE LEVEL                       P1940570
8940  MRRVI=2                                                           P1940580
C*****    EXTENDED RANGE FROM DOUBLE LEVEL******************************P1940590
      WRITE (NUVI,8942)MRRVI                                            P1940600
C*****    HEADER FOR DOUBLE LEVEL WRITTEN                               P1940610
      DO 7940  KBCVI = 3,4                                              P1940620
        DO 7940 JACVI = 1,2,3                                           P1940630
        GO TO 7941                                                      P1940640
8947    IGDVI=  1                                                       P1940650
7940  CONTINUE                                                          P1940660
C*****    TEST JACVI FOR VALUE OF 1                                     P1940670
7941  IF (JACVI-1) 7942,7943,7942                                       P1940680
C*****    ERROR                                                         P1940690
7942  WRITE (NUVI,7947)                                                 P1940700
C*****    DOUBLE LEVEL NESTING IN ERROR                                 P1940710
      GO TO 8946                                                        P1940720
C*****    TEST KBCVI FOR VALUE OF 3 OR 4                                P1940730
7943  IF (KBCVI-3) 7942,8947,7944                                       P1940740
7944  IF (KBCVI-4) 7942,7945,7942                                       P1940750
C*****    CORRECT                                                       P1940760
7945  WRITE (NUVI,7949)                                                 P1940770
C*****    DOUBLE LEVEL TEST CORRECT                                     P1940780
8946  CONTINUE                                                          P1940790
      I3I(1,1,1) = 2                                                    P1940800
      I3I(2,1,1) = 4                                                    P1940810
      I3I(1,2,1) = 1                                                    P1940820
      I3I(2,2,1) = 2                                                    P1940830
      I3I(1,1,2)= -2                                                    P1940840
      I3I(2,1,2) = 0                                                    P1940850
      I3I(1,2,2) = -3                                                   P1940860
      I3I(2,2,2) = -2                                                   P1940870
8952  FORMAT(//2X,40HEXTENDED RANGE CONTAINING A DO STATEMENT)          P1940880
      WRITE(NUVI, 8952)                                                 P1940890
      DO 8948 IVI = 1,2                                                 P1940900
      I3I(1,1,IVI) = I3I(1,1,IVI) + 1                                   P1940910
      DO 8948  JVI = 1,2                                                P1940920
      I3I(1,JVI,IVI) = I3I(1,JVI,IVI) + 2                               P1940930
      GO TO 8949                                                        P1940940
8951  CONTINUE                                                          P1940950
8948  CONTINUE                                                          P1940960
      WRITE (NUVI, 8950) I3I                                            P1940970
8950  FORMAT(8(/I5) /30H  THE ABOVE 8 VALUES SHOULD BE/                 P1940980
     1 33H  IN DESCENDING ORDER FROM 8 TO 1)                            P1940990
      GO TO 8953                                                        P1941000
8949  DO 8954  KVI = 1,2                                                P1941010
      I3I(KVI,JVI,IVI) = I3I(KVI,JVI,IVI) + 3                           P1941020
8954  CONTINUE                                                          P1941030
      GO TO 8951                                                        P1941040
8953  CONTINUE                                                          P1941050
C*****    END OF TEST SEGMENT 194                                       P1941060
C*****  WHEN EXECUTING ONLY SEGMENT 194, THE  STOP  AND  END  CARDS     P1941070
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1941080
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1941090
C=    STOP                                                              P1941100
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C=    END                                                               P1941110
      STOP                                                              P194C1
      END                                                               P194C2
C***********************************************************************P1950010
C*****                                                                  P1950020
C*****                       DONML - (195)                              P1950030
C*****                                                                  P1950040
C***********************************************************************P1950050
C*****  GENERAL PURPOSE                                          ASA REF P1950060
C*****    TESTS TWO INDEPENDENT LOOPS NESTED                  7.1.2.8/28P1950070
C*****    WITHIN LARGER ONE                                             P1950080
C*****  RESTRICTIONS OBSERVED                                           P1950090
C*****  * M1, M2 AND M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1950100
C*****  * TERMINAL STATEMENT OF EACH DO PHYSICALLY FOLLOWS    7.1.2.8/08P1950110
C*****    THE DO AND IS IN THE SAME PROGRAM UNIT                        P1950120
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1950130
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1950140
C*****    DO STATEMENT                                                  P1950150
C*****  * M1, M2 AND M3 ARE NOT REDEFINED WITHIN DO         7.1.2.8.1/54P1950160
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.1/01P1950170
C*****    ONE DO ARE CONTAINED IN INNERMOST DO OF A NEST                P1950180
C*****                                                                  P1950190
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.      P1950200
C*****                                                                  P0073070
C*****  WHEN EXECUTING ONLY SEGMENT 195, THE FOLLOWING STATEMENT        P0073075
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073080
C*****                                                                  P0073085
C=    NUVI = 6                                                          P0073090
      NUVI = 6                                                          P195B1
C*****                                                                  P0073095
      WRITE (NUVI,1950)                                                 P1950210
1950  FORMAT  (1H1,1X,30HDONML - (195) MULT-LEVEL LOOPS//2X,            P1950220
     - 18HASA REF. - 7.1.2.8//2X,7HRESULTS)                             P1950230
C*****    HEADER FOR SEGMENT 195 WRITTEN                                P1950240
      IHDVI = 1                                                         P1950250
      IGDVI = 2                                                         P1950260
      IFDVI = 3                                                         P1950270
      DO  1951  JACVI = 1,2                                             P1950280
      IFDVI = IFDVI + JACVI                                             P1950290
        DO 1952 KBCVI = 2,4,1                                           P1950300
          IGDVI = IGDVI + 1                                             P1950310
1952  CONTINUE                                                          P1950320
      IFDVI = IFDVI + IGDVI                                             P1950330
        DO  1953  LCCVI = 6,7,3                                         P1950340
        IHDVI = 1 + IHDVI                                               P1950350
1953    CONTINUE                                                        P1950360
      IFDVI = IFDVI + IHDVI                                             P1950370
1951  CONTINUE                                                          P1950380
C*****    TEST IFDVI FOR VALUE OF 24                                    P1950390
      IF (IFDVI - 24) 1954,1955,1954                                    P1950400
C*****    ERROR                                                         P1950410
1954  WRITE (NUVI,1956)                                                 P1950420
1956  FORMAT    (/2X,24H**TEST INDICATES ERROR**)                       P1950430
C*****    MULTI-LEVEL TEST IN ERROR                                     P1950440
      GO TO 1958                                                        P1950450
C*****    CORRECT                                                       P1950460
1955  WRITE (NUVI,1957)                                                 P1950470
1957  FORMAT    (/2X,19H**TEST SUCCESSFUL**)                            P1950480
C*****    MULTI-LEVEL TEST CORRECT                                      P1950490
1958  CONTINUE                                                          P1950500
C*****    END OF TEST SEGMENT 195                                       P1950510
C*****  WHEN EXECUTING ONLY SEGMENT 195, THE  STOP  AND  END  CARDS     P1950520
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1950530
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1950540
 =    STOP                                                              P1950550
C=    END                                                               P1950560
      STOP                                                              P195C1
      END                                                               P195C2
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C***********************************************************************P1960010
C*****                                                                  P1960020
C*****                       DONIO - (196)                              P1960030
C*****                                                                  P1960040
C***********************************************************************P1960050
C*****  GENERAL PURPOSE                                         ASA REF P1960060
C*****    TO TEST DO LOOPS WHICH HAVE I/O TERMINAL              7.1.2.8 P1960070
C*****    STATEMENTS (FORMATTEO REAO, FORMATTED WRITE          7.1.3.2.2P1960080
C*****    ANO REWINO ARE USEO AS TERMINAL STATEMENTS)          7.1.3.2.3P1960090
C*****                                                         7.1.3.3.1P1960100
C*****  RESTRICTIONS OBSERVEO                                           P1960110
C*****  * M1, M2 ANO M3 ARE GREATER THAN ZERO                 7.1.2.8/21P1960120
C*****  * TERMINAL STATEMENT OF EACH 00 PHYSICALLY FOLLOWS    7.1.2.8/08P1960130
C*****    THE OO AND IS IN THE SAME PROGRAM UNIT                        P1960140
C*****  * TERMINAL STATEMENT IS EXECUTABLE BUT NOT A          7.1.2.8/07P1960150
C*****    GO TO, ARITHMETIC IF, RETURN, STOP, PAUSE OR        7.1.2.8/10P1960160
C*****    00 STATEMENT                                                  P1960170
C*****  * M1, M2 ANO M3 ARE NOT REOEFINEO WITHIN OO        7.1.2.8.2/54P1960180
C*****  * BRANCHES TO TERMINAL STATEMENT FOR MORE THAN      7.1.2.8.2/01P1960190
C*****    ONE DO ARE CONTAINEO IN INNERMOST OO OF A NEST                P1960200
C*****                                                                  P1960210
C*****  S P E C I F I C A T I O N S  SEGMENT 196                        P1960220
C*****                                                                  P0013940
C*****  WHEN EXECUTING ONLY SEGMENT 196, THE SPECIFICATION STATEMENTS   P0013945
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0013950
C*****  IN COLUMNS  1  ANO  2  REMOVED.                                 P0013955
C*****                                                                  P0013960
C=    DIMENSION IAC1I(5),AC2S(5,6)                                      P0013965
C=    LOGICAL MCAVB,MCBVB,GH2B(1,2)                                     P0013970
C=    OOUBLE PRECISION CC30(7,2,2),OPAVO,OPBVO                          P0013975
C=    COMPLEX NUMVC,OENVC,LL1C(32)                                      P0013980
      DIMENSION IAC1I(5),AC2S(5,6)                                      P196A1
      LOGICAL MCAVB,MCBVB,GH2B(1,2)                                     P196A2
      DOUBLE PRECISION CC30(7,2,2),DPAVD,DPBVO                          P196A3
      COMPLEX NUMVC,DENVC,LL1C(32)                                      P196A4
C*****                                                                  P0013985
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENTS. NO INPUT TAPE.    P1960230
C*****                                                                  P0073100
C*****  WHEN EXECUTING ONLY SEGMENT 196, THE FOLLOWING STATEMENTS      P0073105
C*****  NUVI=6 AND INVI=9  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.P0073110
C*****                                                                  P0073115
C=    NUVI = 6                                                          P0073120
C=    INVI = 9                                                          P0073125
      NUVI = 6                                                          P196B1
      INVI = 9                                                          P196B2
C*****                                                                  P0073130
      WRITE (NUVI,1960)                                                 P1960240
1960  FORMAT (1H1,1X,31HOONIO - (196) OO LOOPS WITH I/O/16X,            P1960250
     119HTERMINAL STATEMENTS/ 20H  ASA REF. - 7.1.2.8/ 9H  RESULTS)     P1960260
C*****    HEAOER FOR SEGMENT 196 WRITTEN                                P1960270
      KCAVI = 1                                                         P1960280
      CKAVS = 1.0                                                       P1960290
      OPBVO = 1.000                                                     P1960300
      DENVC = (1.0,1.0)                                                 P1960310
      MCBVB = .TRUE.                                                    P1960320
      IAC1I(2) = 1                                                      P1960330
      AC2S(4,3) = 1.                                                    P1960340
      CC30(5,1,2) = 1.000                                               P1960350
      LL1C(2) = (1.0,1.0)                                               P1960360
      GH2B(1,1) = .TRUE.                                                P1960370
      WRITE (INVI,1965) KCAVI, CKAVS, OPBVO, OENVC, MCBVB, IAC1I(2),    P1960380
     1                  AC2S(4,3), CC30(5,1,2), LL1C(2), GH2B(1,1)      P1960390
      REWINO INVI                                                       P1960400
      DO  1964  JACVI = 1,3,1                                           P1960410
C*****                                                                  P1960420
      OO 1961 KBCVI = 1,1,1                                             P1960430
1961     REAO (INVI,1965) MCAVI,CMAVS,OPAVO,NUMVC,MCAVB,IAC1I(KBCVI),   P1960440
     1         AC2S(5,4), CC3D(6,1,2), LL1C(3), GH2B(KBCVI,2)           P1960450
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C*****                                                                  P1960460
          DO 1962  LCCVI = 1,2,1                                        P1960470
1962      REWIND INVI                                                   P1960480
C*****                                                                  P1960490
          DO 1963  MDCVI = 1,1,1                                        P1960500
1963      WRITE (NUVI,1966) MCAVI, IAC1I(1), CMAVS, AC2S(5,4), DPAVD,   P1960510
     1                    CC3D(6,1,2), NUMVC, LL1C(3), MCAVB,           P1960520
     2                   GHZB(MDCVI, MDCVI+1)                           P1960530
1964  CONTINUE                                                          P1960540
      WRITE (NUVI,1967)                                                 P1960550
C*****    FORMAT STATEMENTS FOR THIS SEGMENT                            P1960560
1965  FORMAT (2(I5,F5.1,D8.1,2(F5.1),L5))                               P1960570
1966  FORMAT ( // 2(I10/),2(F11.1/),2(D15.1/),2(F5.1,F6.1/),2(L10/))   P1960580
1967  FORMAT   (//30H  THIS TEST IS SUCCESSFUL IF 3/38H  IDENTICAL GROUPP1960590
     1S OF OUTPUT HAVE BEEN/12H  GENERATED.)                            P1960600
C*****    END OF SEGMENT 196                                            P1960610
C*****  WHEN EXECUTING ONLY SEGMENT 196, THE  STOP  AND  END  CARDS     P1960620
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1960630
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1960640
C=    STOP                                                              P1960650
C=    END                                                               P1960660
      STOP                                                              P196C1
      END                                                               P196C2
C***********************************************************************P1970010
C*****                                                                  P1970020
C*****                       MORDO - (197)                              P1970030
C*****                                                                  P1970040
C***********************************************************************P1970050
C*****  GENERAL PURPOSE                                         ASA REF P1970060
C*****    A MORE COMPLICATED SEGMENT TESTING THE DO STATEMENT    7.1.2.8P1970070
C*****                                                                  P1970080
C*****  S P E C I F I C A T I O N S  SEGMENT 197                        P1970090
C*****                                                                  P0013990
C*****  WHEN EXECUTING ONLY SEGMENT 197  THE SPECIFICATION STATEMENTS   P0013995
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P0014000
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014005
C*****                                                                  P0014010
C=    DIMENSION  IAC1I(5), MCA1I(5)                                     P0014015
      DIMENSION  IAC1I(5), MCA1I(5)                                     P197A1
C*****                                                                  P0014020
C*****  WHEN EXECUTING ONLY SEGMENT 197, THE SEGMENT 005, WHICH         P1970100
C*****  CONTAINS THE STATEMENT FUNCTIONS BEING USED HERE, MUST BE       P1970110
C*****  INSERTED AFTER THE SPECIFICATION STATEMENTS OF SEGMENT 197.     P1970120
C*****                                                                  P1970130
C***********************************************************************P0050500
C*****                                                                  P0050510
C*****                       BSFDF - (005)                              P0050520
C*****                                                                  P0050530
C***********************************************************************P0050540
C*****  GENERAL PURPOSE                                         ASA REF P0050550
C*****    DEFINING STATEMENT FUNCTIONS THAT ARE TO BE TESTED            P0050560
C*****    IN SEGMENT 197                                           8.1.1P0050570
C*****    HEADER FOR SEGMENT 005                                        P0050580
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS AND VARIABLES          P0050590
      CMAFS(CAWVS,CBWVS) = CAWVS * 2. + CBWVS                           P0050600
      CMBFS(MAWVI,MBWVI,MCWVI) =(MAWVI + MBWVI + MCWVI)/3               P0050610
      MCAFI(MAWVI,MBWVI) = MAWVI ** MBWVI                               P0050620
      MCBFI(CAWVS,CBWVS,CCWVS) = (CAWVS + CBWVS + CCWVS) * 2.0          P0050630
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS, VARIABLES AND         P0050640
C*****    INTRINSIC FUNCTIONS                                           P0050650
      CMCFS(CAWVS,CBWVS,CCWVS) = ABS(CAWVS**2 - (CBWVS+CCWVS)**2)       P0050660
      CMDFS(MAWVI,MBWVI) = ISIGN((MAWVI+MBWVI),(MAWVI-MBWVI))           P0050670
      MCCFI(MAWVI,MBWVI,CAWVS) = MAWVI**2 + MBWVI**2 + IFIX(CAWVS)**2   P0050680
      MCDFI(CAWVS,CBWVS,CCWVS,CDWVS,CEWVS) = (CAWVS + CBWVS + CCWVS +   P0050690
     1CDWVS +CEWVS) ** (ABS(CAWVS))                                     P0050700
C*****    DEFINING EXPRESSION CONTAINS PREVIOUSLY DEFINED STATEMENT     P0050710
C*****    FUNCTIONS AND/OR EXTERNAL FUNCTION REFERENCES                 P0050720
      CMEFS(CAWVS,CBWVS) = CMBFS(1,2,3) + SQRT((CAWVS + CBWVS))         P0050730
      CMFFS(MAWVI,MBWVI,MCWVI) = MCCFI(MAWVI,MBWVI,3.0) + MCWVI **2     P0050740
      MCEFI(MAWVI,MBWVI) = MCAFI(MAWVI,MBWVI) ** MCAFI(MAWVI,MBWVI)     P0050750
      MCFFI(CAWVS,CBWVS,CCWVS) = SQRT(CAWVS) + SQRT(CBWVS) + EXP(CCWVS) P0050760
C*****    DEFINING EXPRESSION CONTAINS CONSTANTS, VARIABLES, INTRINSIC  P0050770
C*****    OR EXTERNAL FUNCTION REFERENCES AND PREVIOUSLY DEFINED        P0050780
C*****    STATEMENT FUNCTIONS.                                          P0050790
      CMGFS(MAWVI,MBWVI,CAWVS,CBWVS) = FLOAT(MAWVI ** 2) - CMAFS(CAWVS, P0050800
     1CBWVS) + SQRT((FLOAT(MAWVI + MBWVI)))                             P0050810
      MCGFI(MAWVI,MBWVI,MCWVI,CAWVS) = MCEFI(MAWVI,MBWVI) - MCEFI(MAWVI,P0050820
     1MCWVI) + IFIX(EXP(CAWVS))                                         P0050830
C*****    END OF TEST SEGMENT 005                                       P0050840
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENTS. NO INPUT TAPE.   P1970140
C*****                                                                  P0073140
C*****  WHEN EXECUTING ONLY SEGMENT 197, THE FOLLOWING STATEMENTS       P0073145
C*****  NUVI=6 AND INVI=9  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED. P0073150
C*****                                                                  P0073155
C=    NUVI = 6                                                          P0073160
C=    INVI = 9                                                          P0073165
      NUVI = 6                                                          P197B1
      INVI = 9                                                          P197B2
C*****                                                                  P0073170
      WRITE (NUVI,1970)                                                 P1970150
1970  FORMAT (1H1, 1X,37HMORDO - (197) A MORE COMPLICATED SEG./16X,     P1970160
     1        16HOF DO STATEMENTS//                                     P1970170
     2 35H  ASA REFS - 7.1.2.8 AND 7.1.2.8.1 // 9H  RESULTS )           P1970180
C*****    HEADER FOR SEGMENT 197 WRITTEN                                P1970190
C*****    TEST OF DO WITH STATEMENT FUNCTIONS AND INTRINSIC FUNCTIONS   P1970200
C*****    REFERENCED WITHIN ITS RANGE. TO BE RUN WITH SEG. 005 AND 412  P1970210
      ASSIGN 9190 TO MVI                                                P1970220
      MCBVI = 0                                                         P1970230
      MCHVI = 1971                                                      P1970240
      DO 1971 MCAVI = 4,8,4                                             P1970250
      CMAVS = CMAFS(1.0, FLOAT(MCAVI))                                  P1970260
1971  MCBVI = MCBVI + MCAFI(MCAVI,IFIX(CMAVS) - (MCAVI+2))              P1970270
      IF (MCBVI - 2) 9966, 9190, 9966                                   P1970280
9190  MCHVI = 1973                                                      P1970290
C*****    TEST OF DO WITH CALL STATEMENTS REFERENCED WITHIN ITS RANGE   P1970300
      IVI = 0                                                           P1970310
      ASSIGN 9968 TO MVI                                                P1970320
      DO 1973 MCAVI = 1,3                                               P1970330
1973  CALL  MDQ( MCAVI, IVI)                                            P1970340
      IF(IVI - 6) 9966, 9968, 9966                                      P1970350
C*****    TEST OF DO WITH THE FOLLOWING FEATURES COMBINED -             P1970360
C*****    1.  AN EXIT FROM THE RANGE OF A DO BY THE EXECUTION OF A      P1970370
C*****        GO-TO STATEMENT, THE CONTROL VARIABLE OF THE DO IS        P1970380
C*****        DEFINED                                    7.1.2.8.1/19-23P1970390
C*****    2.  A GO TO STATEMENT CAUSES CONTROL TO PASS FROM AN          P1970400
C*****        INNER DO TO THE OUTER DO (WITHIN THE NESTED RANGE)        P1970410
9968  MCHVI = 1976                                                      P1970420
      ASSIGN 9191 TO MVI                                                P1970430
      MCBVI = 0                                                         P1970440
      DO 1976 MCAVI = 1,1,1                                             P1970450
9192  MCBVI = MCBVI + 1                                                 P1970460
      DO 1975 MCCVI = 1,3,1                                             P1970470
      MCBVI = MCBVI + 1                                                 P1970480
      IF(MCBVI - 4) 9197, 9192, 1975                                    P1970490
9197  GO TO (1975, 1975, 9966), MCCVI                                   P1970500
1975  CONTINUE                                                          P1970510
1976  CONTINUE                                                          P1970520
      IF (MCBVI - 8) 9966, 9191, 9966                                   P1970530
C*****    TEST THAT THE STATEMENT LABEL OF THE TERMINAL STATEMENT       P1970540
C*****    OF MORE THAN ONE DO CAN BE USED IN ANY GO TO OR ARITHMETIC    P1970550
C*****    IF STATEMENT THAT OCCURS IN THE RANGE OF THE MOST DEEPLY      P1970560
C*****    CONTAINED DO WITH THAT TERMINAL STATEMENT.      7.1.2.8.2/1-6 P1970570
C*****    ALSO THE CONTROL VARIABLE IS DEFINED WHEN EXIT IS MADE BY THE P1970580
C*****    EXECUTION OF AN ARITHMETIC IF STATEMENT.                      P1970590
9191  ASSIGN 9194 TO MVI                                                P1970600
      MCHVI = 1977                                                      P1970610
      MCEVI = -24                                                       P1970620
      DO 1977 MCAVI = 1,2                                               P1970630
      MCEVI = MCEVI + 1                                                 P1970640
         DO 1977 MCBVI = 1,2                                            P1970650
         MCEVI = MCEVI + 1                                              P1970660
            DO 1977 MCCVI = 1,5,1                                       P1970670
            MCEVI = MCEVI + 1                                           P1970680
            IF(MCEVI )     1977, 1977, 1978                             P1970690
1977  CONTINUE                                                          P1970700
C*****  ERROR IF LOOP TERMINATES THRU CONTINUE                          P1970710
      GO TO 9966                                                        P1970720
C*****  CONTROL VARIABLE DEFINED ON FIRST LEVEL ON ARITH. IF            P1970730
1978  MCEVI = MCAVI + MCBVI + MCCVI                                     P1970740
      MCHVI = 1978                                                      P1970750
      IF(MCEVI -8) 9966,9194,9966                                       P1970760
9194  MCHVI = 1974                                                      P1970770
      MCEVI = 0                                                         P1970780
      ASSIGN 9961 TO MVI                                                P1970790
      DO 1974 MCAVI = 1,2                                               P1970800
        DO 1974 MCBVI = 1,2,1                                           P1970810
          DO 1974 MCCVI = 4,5,1                                         P1970820
          DO 1974 MCDVI = 2,3                                           P1970830
          GO TO 9193                                                    P1970840
9195      GO TO 1974                                                    P1970850
9193      MCEVI = MCAVI + MCBVI + MCCVI + MCDVI + MCEVI                  P1970860
            GO TO 9195                                                  P1970870
1974           CONTINUE                                                 P1970880
      IF(MCEVI - 160) 9966, 9961, 9966                                  P1970890
C*****    TEST OF DO WITH I/O STATEMENTS REFERENCED WITHIN ITS RANGE.   P1970900
C*****    REWIND, UNFORMATTED READ AND WRITE ARE REFERENCED. THE        P1970910
C*****    FOLLOWING 3 DOS MUST BE KEPT TOGETHER FOR SELF-CHECKING       P1970920
C*****    PURPOSES                                                      P1970930
9961  MCHVI = 1972                                                      P1970940
      ASSIGN 9196 TO MVI                                                P1970950
      REWIND INVI                                                       P1970960
      DO 9963 MCAVI = 1,4                                               P1970970
      MCA1I(MCAVI) = MCAVI                                              P1970980
      WRITE ( INVI) (MCA1I(MCBVI), MCBVI = 1,MCAVI, 1)                  P1970990
9963  CONTINUE                                                          P1971000
      DO 9964 MCCVI = 1,4                                               P1971010
9964  REWIND INVI                                                       P1971020
      DO 1972 MCDVI = 1,4                                               P1971030
      READ (INVI) (IAC1I(MCEVI),MCEVI = 1,MCDVI)                        P1971040
      DO 1972 MCFVI = 1, MCDVI                                          P1971050
      MCGVI = IAC1I(MCFVI) - MCA1I(MCFVI)                               P1971060
      IF (MCGVI) 9966, 1972, 9966                                       P1971070
1972  CONTINUE                                                          P1971080
9196  WRITE(NUVI, 9969)                                                 P1971090
      GO TO 9198                                                        P1971100
C*****    ERROR MESSAGES IF DO STATEMENT IS EXECUTED IN ERROR.          P1971110
9966  WRITE (NUVI,9967) MCHVI                                           P1971120
9967  FORMAT (// 36H  DO RANGE ENDING AT STATEMENT LABEL,I5,            P1971130
     114H  IS IN ERROR.)                                                P1971140
9969  FORMAT(// 35H  THIS SEGMENT SUCCESSFULLY TESTED /                 P1971150
     222H  IF NO ERROR MESSAGES)                                        P1971160
      GO TO MVI,(9190,9968,9191,9194,9961,9196)                         P1971170
9198  REWIND INVI                                                       P1971180
C*****    END OF TEST SEGMENT 197                                       P1971190
C*****  WHEN EXECUTING ONLY SEGMENT 197, THE  STOP  AND  END  CARDS     P1971200
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P1971210
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P1971220
C=    STOP                                                              P1971230
C=    END                                                               P1971240
      STOP                                                              P197C1
      END                                                               P197C2
C***********************************************************************P4120010
C*****                                                                  P4120020
C*****                       MDQ   - (412)                              P4120030
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C*****                                                                  P4120040
C***********************************************************************P4120050
C*****  GENERAL PURPOSE                                         ASA REF P4120060
C*****    THIS SUBROUTINE IS USED WITH SEGMENT 197 TO                   P4120070
C*****    SHOW THAT SUBROUTINES MAY BE CALLED FROM DO LOOPS             P4120080
      SUBROUTINE MDQ(MWVI,IWVI)                                         P4120090
      IWVI = MWVI + IWVI                                                P4120100
      RETURN                                                            P4120110
C*****    END OF TEST SEGMENT 412                                       P4120120
      END                                                               P4120130
C***********************************************************************P2000010
C*****                                                                  P2000020
C*****                       SUBR1 - (200)                              P2000030
C*****                                                                  P2000040
C***********************************************************************P2000050
C*****  GENERAL PURPOSE                                         ASA REF.P2000060
C*****    TO TEST SUBROUTINE SUBPROGRAM WITHOUT AN ARGUMENT LIST 8.4.1.1P2000070
C*****  GENERAL COMMENTS                                                P2000080
C*****    IT IS TO BE RUN WITH SEGMENT 410                              P2000090
C*****  RESTRICTIONS OBSERVED                                           P2000100
C*****    SYMBOLIC NAME OF A SUBROUTINE MAY NOT APPEAR IN ANY 8.4.1.1/56P2000110
C*****    STATEMENT IN THIS SUBROUTINE EXCEPT IN THE                    P2000120
C*****    SUBROUTINE STATEMENT ITSELF                                   P2000130
C*****  * SYMBOLIC NAMES OF DUMMY ARGUMENTS MAY NOT APPEAR    8.4.1.1/39P2000140
C*****    IN EQUIVALENCE OR COMMON STATEMENTS IN THE SUBPROGRAM         P2000150
C*****  * SUBROUTINES MAY NOT CONTAIN A FUNCTION STATEMENT,   8.4.1.1/45P2000160
C*****    ANOTHER SUBROUTINE STATEMENT, OR ANY STATEMENT THAT           P2000170
C*****    DIRECTLY OR INDIRECTLY REFERENCES THE SUBROUTINE              P2000180
C*****    BEING DEFINED                                                 P2000190
C*****  * AT LEAST ONE RETURN STATEMENT MUST BE IN A SUBROUTINE         P2000200
C*****                                                        8.4.1.1/49P2000210
C*****  S P E C I F I C A T I O N S  SEGMENT 200                        P2000220
C*****                                                                  P0014030
C*****  WHEN EXECUTING ONLY SEGMENT 200, THE SPECIFICATION STATEMENTS   P0014035
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0014040
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014045
C=    COMMON  AXVS, CXVS, IXVI, IAX1I(4)                                P0014050
      COMMON  AXVS, CXVS, IXVI, IAX1I(4)                                P200A1
C*****                                                                  P0014055
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT. NO INPUT TAPE.      P2000230
C*****  WHEN EXECUTING ONLY SEGMENT 200, THE FOLLOWING STATEMENTS       P0073180
C*****  NUVI=6 AND INVI=9 MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.  P0073185
C*****                                                                  P0073190
C=    NUVI = 6                                                          P0073195
C=    INVI = 9                                                          P0073200
      NUVI = 6                                                          P200B1
      INVI = 9                                                          P200B2
      WRITE(NUVI, 0200)                                                 P2000240
200   FORMAT(39H1 SUBR1 - (200)   SUBROUTINE SUBPROGRAM /15X,           P2000250
     124HWITHOUT AN ARGUMENT LIST //18H  ASA REF. - 8.4.1//9H  RESULTS) P2000260
      IXVI = NUVI                                                       P2000270
      IAX1I(1) = INVI                                                   P2000280
      CALL SUBRQ                                                        P2000290
      CONTINUE                                                          P2000300
C*****    END OF SEGMENT 200                                            P2000310
C*****  WHEN EXECUTING ONLY SEGMENT 200, THE STOP AND END CARDS         P2000320
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P2000330
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P2000340
C=    STOP                                                              P2000350
C=    END                                                               P2000360
      STOP                                                              P200C1
      END                                                               P200C2
C***********************************************************************P4100010
C*****                                                                  P4100020
C*****                       SUBRQ - (410)                              P4100030
C*****                                                                  P4100040
C***********************************************************************P4100050
C*****  THIS SEGMENT TESTS THAT A VARIETY OF FORTRAN STATEMENTS         P4100060
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C*****  CAN BE USED IN A SUBROUTINE.  IT IS TO BE RUN WITH SEGMENT 200  P4100070
      SUBROUTINE SUBRO                                                  P4100080
8867  FORMAT (//36H  DO RANGE ENDING AT STATEMENT LABEL,I5,14H  IS IN ERP4100090
     1ROR.)                                                             P4100100
      DIMENSION KCA1I(5), KAC1I(5)                                      P4100110
      COMMON  BXVS, DXVS, NXVI, IXVI                                    P4100120
C*****    DEFINE ARITHMETIC STATEMENT FUNCTION                          P4100130
      CKAFS(CEWVS,CFWVS) = CEWVS*2. + CFWVS                             P4100140
8868  FORMAT (//35H  THIS SEGMENT SUCCESSFULLY TESTED /                 P4100150
     1 23H  IF NO ERROR MESSAGES.)                                      P4100160
      KCAFI(KEWVI,KFWVI) = KEWVI**KFWVI                                 P4100170
C*****    TEST OF DO WITH STATEMENT FUNCTIONS                           P4100180
      KCHVI = 4101                                                      P4100190
      ASSIGN 4102 TO MVI                                                P4100200
      KCBVI = 0                                                         P4100210
      DO 4101 KCAVI = 4,8,4                                             P4100220
      CKAVS = CKAFS(1.0, FLOAT(KCAVI))                                  P4100230
4101  KCBVI = KCBVI + KCAFI(KCAVI,IFIX(CKAVS) - (KCAVI + 2))            P4100240
      IF(KCBVI - 2) 8866, 4102, 8866                                    P4100250
C*****    TEST OF DO WITH THE FOLLOWING FEATURES COMBINED -             P4100260
C*****    1.  AN EXIT FROM THE RANGE OF A DO BY THE EXECUTION OF A      P4100270
C*****        GO-TO STATEMENT, THE CONTROL VARIABLE OF THE DO IS        P4100280
C*****        DEFINED                                                   P4100290
C*****    2.  A GO TO STATEMENT CAUSES CONTROL TO PASS FROM AN          P4100300
C*****        INNER DO TO THE OUTER DO (WITHIN THE NESTED RANGE)        P4100310
4102  KCHVI = 4106                                                      P4100320
      ASSIGN 8870 TO MVI                                                P4100330
      KCBVI = 0                                                         P4100340
      DO 4106 KCAVI = 1,1,1                                             P4100350
8872  KCBVI = KCBVI + 1                                                 P4100360
      DO 4105 KCCVI = 1,3,1                                             P4100370
      KCBVI = KCBVI + 1                                                 P4100380
      IF (KCBVI - 4) 8873, 8872, 4105                                   P4100390
8873  GO TO (4105,4105,8866), KCCVI                                     P4100400
4105  CONTINUE                                                          P4100410
4106   CONTINUE                                                         P4100420
      IF(KCBVI - 8) 8866, 8870, 8866                                    P4100430
C*****    TEST THAT THE STATEMENT LABEL OF THE TERMINAL STATEMENT       P4100440
C*****    OF MORE THAN ONE DO CAN BE USED IN ANY GO TO OR ARITHMETIC    P4100450
C*****    IF STATEMENT THAT OCCURS IN THE RANGE OF THE MOST DEEPLY      P4100460
C*****    CONTAINED DO WITH THAT TERMINAL STATEMENT                     P4100470
8870  ASSIGN 8876 TO MVI                                                P4100480
      KCHVI = 4107                                                      P4100490
      KCEVI = -24                                                       P4100500
      DO 4107 KCAVI = 1,2                                               P4100510
      KCEVI = KCEVI + 1                                                 P4100520
         DO 4107 KCBVI = 1,2                                            P4100530
         KCEVI = KCEVI + 1                                              P4100540
            DO 4107 KCCVI = 1,5,1                                       P4100550
            KCEVI = KCEVI + 1                                           P4100560
            IF(KCEVI )     4107,4107,4104                               P4100570
4107  CONTINUE                                                          P4100580
C*****ERROR IF LOOP TERMINATES THRU CONTINUE                            P4100590
      GO TO 8866                                                        P4100600
C*****CONTROL VARIABLE DEFINED ON FIRST LEVEL ON ARITH. IF              P4100610
4104  KCEVI = KCAVI + KCBVI + KCCVI                                     P4100620
      KCHVI = 4104                                                      P4100630
      IF(KCEVI - 8) 8866,8876,8866                                      P4100640
8876  KCHVI = 4103                                                      P4100650
      KCEVI = 0                                                         P4100660
      ASSIGN 8871 TO MVI                                                P4100670
      DO 4103 KCAVI =1,2                                                P4100680
        DO 4103 KCBVI = 1,2,1                                           P4100690
          DO 4103 KCCVI = 4,5,1                                         P4100700
            DO 4103 KCDVI = 2,3                                         P4100710
              GO TO 8878                                                P4100720
8877          GO TO 4103                                                P4100730
8878          KCEVI = KCAVI + KCBVI + KCCVI + KCDVI + KCEVI             P4100740
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              GO TO 8877                                                P4100750
4103          CONTINUE                                                  P4100760
      IF(KCEVI - 160)8866,8871,8866                                     P4100770
C*****    TEST OF DO WITH I/O STATEMENTS                                P4100780
8871  ASSIGN 8860 TO MVI                                                P4100790
      KCHVI = 4108                                                      P4100800
      REWIND IXVI                                                       P4100810
      DO 8863 KCAVI = 1,4                                               P4100820
      KCA1I(KCAVI) = KCAVI                                              P4100830
      WRITE(IXVI)(KCA1I(KCBVI),KCBVI = 1,KCAVI,1)                       P4100840
8863  CONTINUE                                                          P4100850
      DO 8864 KCCVI =1,4                                                P4100860
8864  REWIND IXVI                                                       P4100870
      DO 4108  KCDVI = 1,4                                              P4100880
      READ(IXVI)(KAC1I(KCEVI),KCEVI = 1,KCDVI    )                      P4100890
      DO 4108 KCFVI = 1, KCDVI                                          P4100900
      KCGVI = KAC1I(KCFVI)-KCA1I(KCFVI)                                 P4100910
      IF(KCGVI) 8866,4108,8866                                          P4100920
4108  CONTINUE                                                          P4100930
8860  WRITE(NXVI,8868)                                                  P4100940
      GO TO 8869                                                        P4100950
8866  WRITE(NXVI,8867) KCHVI                                            P4100960
      GO TO MVI,(8860,4102,8870,8871,8876)                              P4100970
8869  REWIND IXVI                                                       P4100980
      RETURN                                                            P4100990
C*****    END OF TEST SEGMENT 410                                       P4101000
      END                                                               P4101010
C***********************************************************************P3000010
C*****                                                                  P3000020
C*****                       LOGIF - (300)                              P3000030
C*****                                                                  P3000040
C***********************************************************************P3000050
C*****  GENERAL PURPOSE                                         ASA REF P3000060
C*****    TEST LOGICAL IF STATEMENT                             7.1.2.3P3000070
C*****  GENERAL COMMENT                                                 P3000080
C*****    ASSIGNED GO TO,INTRINSIC FUNCTION,ARITHMETIC IF,CALL,         P3000090
C*****    COMPUTED GO TO AND I/O STATEMENTS ASSUMED WORKING.            P3000100
C*****                                                                  P3000110
C*****  S P E C I F I C A T I O N S  SEGMENT 300                        P3000120
C*****                                                                  P0014060
C*****  WHEN EXECUTING ONLY SEGMENT 300, THE SPECIFICATION STATEMENTS   P0014065
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE C=                  P0014070
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014075
C*****                                                                  P0014080
C=    LOGICAL MCAVB,MCBVB,MCA1B(7)                                      P0014085
C=    DOUBLE PRECISION DPAVD, DPBVD,DPCVD,DPDVD,DPEVD,DPFVD             P0014090
      LOGICAL MCAVB,MCBVB,MCA1B(7)                                      P300A1
      DOUBLE PRECISION DPAVD, DPBVD,DPCVD,DPDVD,DPEVD,DPFVD             P300A2
C*****                                                                  P0014095
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P3000130
C*****  WHEN EXECUTING ONLY SEGMENT 300, THE FOLLOWING STATEMENT        P0073210
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 AND 2 REMOVED.         P0073215
C*****                                                                  P0073220
C=    NUVI = 6                                                          P0073225
      NUVI = 6                                                          P300B1
      WRITE (NUVI,3000)                                                 P3000140
3000  FORMAT (1H1, 1X,34HLOGIF - (300) LOGICAL IF STATEMENT//           P3000150
     120H  ASA REF. - 7.1.2.3//10H  RESULTS //                          P3000160
     2/37H  TEST EXPLICITLY WRITTEN SIGNED ZERO/2X)                     P3000170
C*****    HEADER FOR SEGMENT 300 WRITTEN                                P3000180
      MACVI = 0                                                         P3000190
      MCAVB = .TRUE.                                                    P3000200
      MCBVB = .FALSE.                                                   P3000210
      MCA1B(1) = .TRUE.                                                 P3000220
      MCA1B(2) = .FALSE.                                                P3000230
C*****    TEST THAT MINUS ZERO AND PLUS ZERO ARE TREATED          4.2/11P3000240
C*****    AS EQUAL VALUES                                               P3000250
      IVI = -8                                                          P3000260
      IIVI = -8                                                         P3000270
      JVI = +0                                                          P3000280
      JJVI = -0                                                         P3000290
      KVI = 8                                                           P3000300
      KKVI = 8                                                          P3000310
      AVS = -0.5                                                        P3000320
      AAVS = -0.5                                                       P3000330
      BVS  = +0.0                                                       P3000340
      BBVS = -0.0                                                       P3000350
      CVS = 0.5                                                         P3000360
      CCVS = 0.5                                                        P3000370
      DPAVD = -0.5D0                                                    P3000380
      DPBVD = -0.5D0                                                    P3000390
      DPCVD = +0.0D0                                                    P3000400
      DPDVD = -0.0D0                                                    P3000410
      DPEVD = 0.5D0                                                     P3000420
      DPFVD = 0.5D0                                                     P3000430
C*****  TEST FOR EXPLICITLY WRITTEN -0 EQUAL TO +0                       P3000440
      IF((JVI) .EQ. (JJVI))MACVI = MACVI + 1                            P3000450
      IF((JJVI) .EQ. (JVI)) MACVI = MACVI + 1                           P3000460
      IF((+0) .EQ. (-0)) MACVI = MACVI + 1                              P3000470
      IF((-0) .EQ. (+0)) MACVI = MACVI + 1                              P3000480
      IF (MACVI - 4) 9951, 9954, 9951                                   P3000490
9951  WRITE (NUVI, 9953)                                                P3000500
      GO TO 9955                                                        P3000510
9952  FORMAT(14H  +0 EQUALS -0)                                         P3000520
9953  FORMAT(17H  +0 NOT EQUAL -0)                                      P3000530
9954  WRITE (NUVI, 9952)                                                P3000540
9955  MACVI = 0                                                         P3000550
C*****  TEST EXPLICITLY WRITTEN +0.0 EQUALS -0.0                        P3000560
      IF ((BVS) .EQ. (BBVS)) MACVI = MACVI + 1                          P3000570
      IF ((BBVS) .EQ. (BVS)) MACVI = MACVI + 1                          P3000580
      IF ((+0.0) .EQ. (-0.0)) MACVI = MACVI + 1                         P3000590
      IF ((-0.0) .EQ. ( 0.0)) MACVI = MACVI + 1                         P3000600
      IF (MACVI - 4) 9944, 9947, 9944                                   P3000610
9944  WRITE (NUVI, 9946)                                                P3000620
      GO TO 9948                                                        P3000630
9945  FORMAT (18H  +0.0 EQUALS -0.0)                                    P3000640
9946  FORMAT (21H  +0.0 NOT EQUAL -0.0)                                 P3000650
9947  WRITE (NUVI, 9945)                                                P3000660
C*****  TEST EXPLICITLY WRITTEN +0.0D0 EQUALS -0.0D0                    P3000670
9948  MACVI = 0                                                         P3000680
      IF ((DPCVD) .EQ. (DPDVD)) MACVI = MACVI +1                        P3000690
      IF ((DPDVD).EQ. (DPCVD)) MACVI = MACVI + 1                        P3000700
C*****                                                                  P3000710
      IF ((+0.0D0) .EQ. (-0.0D0)) MACVI = MACVI + 1                     P3000720
      IF ((-0.0D0) .EQ. (0.0D0)) MACVI = MACVI + 1                      P3000730
      IF (MACVI - 4) 9949, 9957, 9949                                   P3000740
9949  WRITE (NUVI, 9960)                                                P3000750
      GO TO 9958                                                        P3000760
9959  FORMAT (22H  +0.0D0 EQUALS -0.0D0)                                P3000770
9960  FORMAT (25H  +0.0D0 NOT EQUAL -0.0D0)                             P3000780
9957  WRITE (NUVI, 9959)                                                P3000790
9958  MACVI = 0                                                         P3000800
      WRITE (NUVI, 7950)                                                P3000810
7950  FORMAT (33H0 TEST COMPUTATIONAL SIGN OF ZERO/2X)                  P3000820
C*****  TEST FOR COMPUTATIONALLY CREATED +0 AND -0                      P3000830
      IF((IVI * JVI) .EQ. (JVI))MACVI = MACVI + 1                       P3000840
      IF((JVI) .EQ. (JVI * IIVI))MACVI = MACVI + 1                      P3000850
      IF((JVI / IVI) .EQ. (+0) )MACVI = MACVI + 1                       P3000860
      IF((IVI + KVI) .EQ. (JVI))MACVI = MACVI + 1                       P3000870
      IF((KKVI + IIVI) .EQ. (JVI))MACVI = MACVI + 1                     P3000880
      IF((IIVI - IVI) .EQ. (JVI))MACVI = MACVI + 1                      P3000890
      IF((KVI - KKVI) .EQ. (JVI))MACVI = MACVI + 1                      P3000900
      IF (MACVI - 7) 9956, 9940, 9956                                   P3000910
9956  WRITE (NUVI,9953)                                                 P3000920
      GO TO 7955                                                        P3000930
9940  WRITE (NUVI,9952)                                                 P3000940
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C*****  TEST FOR COMPUTATIONALLY CREATED +0.0 AND -0.0                  P3000950
7955  MACVI = 0                                                         P3000960
      IF ((AVS * BVS) .EQ. (BVS)) MACVI = MACVI + 1                     P3000970
      IF ((BVS) .EQ. (BVS * AAVS)) MACVI = MACVI + 1                    P3000980
      IF ((BVS / AVS) .EQ. ( 0.0)) MACVI = MACVI + 1                    P3000990
      IF ((AVS + CVS) .EQ. (BVS)) MACVI = MACVI + 1                     P3001000
      IF ((CCVS + AAVS) .EQ. (BVS)) MACVI = MACVI + 1                   P3001010
      IF ((AAVS - AVS) .EQ. (BVS)) MACVI = MACVI + 1                    P3001020
      IF ((CVS - CCVS) .EQ. (BVS)) MACVI = MACVI + 1                    P3001030
      IF (MACVI - 7) 7951, 7952, 7951                                   P3001040
7951  WRITE (NUVI, 9946)                                                P3001050
      GO TO 7953                                                        P3001060
7952  WRITE (NUVI, 9945)                                                P3001070
C*****  TEST FOR COMPUTATIONALLY CREATED +0.0D0 AND -0.0D0              P3001080
7953  MACVI = 0                                                         P3001090
      IF ((DPAVD * DPCVD) .EQ. (DPCVD)) MACVI = MACVI + 1               P3001100
      IF ((DPCVD) .EQ. (DPCVD * DPBVD)) MACVI = MACVI + 1               P3001110
      IF ((DPCVD / DPAVD) .EQ. (0.0D0)) MACVI = MACVI + 1               P3001120
      IF ((DPAVD + DPEVD) .EQ. (DPCVD)) MACVI = MACVI + 1               P3001130
      IF ((DPFVD + DPBVD) .EQ. (DPCVD)) MACVI = MACVI + 1               P3001140
      IF ((DPBVD - DPAVD) .EQ. (DPCVD)) MACVI = MACVI + 1               P3001150
      IF ((DPEVD - DPFVD) .EQ. (DPCVD)) MACVI = MACVI + 1               P3001160
      IF (MACVI - 7) 7954, 9939, 7954                                   P3001170
7954  WRITE (NUVI, 9960)                                                P3001180
      GO TO 9941                                                        P3001190
9939  WRITE (NUVI, 9959)                                                P3001200
 9941 MCAVI = 0                                                         P3001210
      WRITE (NUVI, 9942)                                                P3001220
9942  FORMAT(31H0 TEST -LOGICAL IF- FOLLOWED BY/                        P3001230
     131H  DIFFERENT KINDS OF STATEMENTS )                              P3001240
C*****  TEST 1                                                          P3001250
C*****     LOGICAL IF FOLLOWED BY SIMPLE ASSIGNMENT STATEMENT           P3001260
C*****     CORRECT RESULT = 0, OTHERWISE RESULT = 1                     P3001270
      IF (MCA1B(2)) MCAVI = 1                                           P3001280
      WRITE (NUVI,3009) MCAVI                                           P3001290
C*****  TEST 2                                                          P3001300
C*****     LOGICAL IF FOLLOWED BY USE OF INTRINSIC FUNCTION             P3001310
C*****     CORRECT RESULT =0, OTHERWISE RESULT =2                       P3001320
      MCAVI = 2                                                         P3001330
      IF (MCAVB) MCAVI = IFIX(5.0 - 4.0 - 1.0)                          P3001340
      WRITE (NUVI,3009) MCAVI                                           P3001350
      MCAVI = 0                                                         P3001360
C*****  TEST 3                                                          P3001370
C*****     LOGICAL IF FOLLOWED BY ARITHMETIC STATEMENT                  P3001380
C*****     CORRECT RESULT =0, OTHERWISE RESULT =3                       P3001390
      IF (MCAVB .AND. MCBVB) MCAVI = 3* 2 / 2                           P3001400
      WRITE (NUVI,3009) MCAVI                                           P3001410
C*****  TEST 4                                                          P3001420
C*****     LOGICAL IF FOLLOWED BY GO TO STATEMENT                       P3001430
C*****     CORRECT RESULT =0, OTHERWISE RESULT =4                       P3001440
      MCAVI = 0                                                         P3001450
      IF (MCAVB .AND. MCBVB .OR. MCA1B(1)) GO TO 3001                   P3001460
      MCAVI = 4                                                         P3001470
3001  WRITE (NUVI,3009) MCAVI                                           P3001480
C*****  TEST 5                                                          P3001490
C*****     LOGICAL IF FOLLOWED BY CALL STATEMENT                        P3001500
C*****     CORRECT RESULT =0, OTHERWISE RESULT =5                       P3001510
      MCAVI =0                                                          P3001520
      IF (MCBVB .OR. (1 .GE. 2) .AND..FALSE.) CALL SMCQ(MCAVI)          P3001530
      WRITE (NUVI,3009) MCAVI                                           P3001540
C*****  TEST 6                                                          P3001550
C*****     LOGICAL IF FOLLOWED BY NESTED USE OF INTRINSIC FUNCTIONS     P3001560
C*****     CORRECT RESULT =0, OTHERWISE RESULT =6                       P3001570
      MCAVI = 6                                                         P3001580
      IF (.TRUE. .OR. ((1. .LE. (0.1 + 1.5)) .AND. (MCA1B(1) .OR. .TRUE P3001590
     1.)) .AND. MCBVB)  MCAVI = IFIX(REAL((0.0,1.0)))                   P3001600
      WRITE (NUVI,3009) MCAVI                                           P3001610
C*****  TEST 7                                                          P3001620
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C*****     LOGICAL IF FOLLOWED BY ASSIGNED GO TO STATEMENT                 P3001630
C*****     CORRECT RESULT =0, OTHERWISE RESULT =7                          P3001640
      ASSIGN 3002 TO MCBVI                                                 P3001650
      MCAVI = 7                                                            P3001660
      IF (.NOT. (MCAVB .AND. MCBVB .AND. .FALSE. .OR. (.NOT. .TRUE.)))     P3001670
     1GO TO MCBVI,(3001,3002,3003)                                         P3001680
      GO TO 3003                                                           P3001690
3002  MCAVI = 0                                                            P3001700
3003  WRITE (NUVI,3009) MCAVI                                              P3001710
C*****  TEST 8                                                             P3001720
C*****     LOGICAL IF FOLLOWED BY ARITHMETIC IF STATEMENT                  P3001730
C*****     CORRECT RESULT =0, OTHERWISE RESULT =8                          P3001740
      MCAVI = 0                                                            P3001750
      IF (.NOT. (.NOT.(.TRUE. .OR. MCAVB .AND. (8. .NE. 7.))))             P3001760
     1IF (MCAVI) 3004,3005,3004                                            P3001770
3004  MCAVI = 8                                                            P3001780
3005  WRITE (NUVI,3009) MCAVI                                              P3001790
C*****  TEST 9                                                             P3001800
C*****     LOGICAL IF FOLLOWED BY I/O STATEMENT                            P3001810
C*****     CORRECT RESULT =0, OTHERWISE RESULT =9                          P3001820
      MCAVI = 0                                                            P3001830
      IF ((8.0D0 .EQ. (1. + 7.)) .AND. (.NOT. (3 .NE. 3)))                 P3001840
     1WRITE (NUVI,3009) MCAVI                                              P3001850
C*****  TEST 10                                                            P3001860
C*****     LOGICAL IF FOLLOWED BY COMPUTED GO TO STATEMENT                 P3001870
C*****     CORRECT RESULT =0, OTHERWISE RESULT =10                         P3001880
      MCAVI = 2                                                            P3001890
      IF ( .TRUE. .AND. (8 .GE. 6) .OR. (.FALSE.)) GO TO (9950,3006),      P3001900
     1MCAVI                                                                P3001910
9950  MCAVI = 10                                                           P3001920
      GO TO 3007                                                           P3001930
3006  MCAVI = 0                                                            P3001940
3007  WRITE (NUVI,3009) MCAVI                                              P3001950
      WRITE (NUVI,3008)                                                    P3001960
C*****  TEST EXPRESSIONS IN LOGICAL IF STATEMENTS                          P3001970
C*****    TEST 11  .LT. EXPRESSION, RELATION, EXPRESSION  (TRUE)           P3001980
      MCAVI = 11                                                           P3001990
      IF((SNGL(DABS(-DSIGN(DBLE(2.0),1.0D0)))).LT.AMIN1((FLOAT(IDIM        P3002000
     1 (1 + 2, 0))), (AIMAG(CMPLX(1.0,2.0)))) + 1.0) MCAVI = 0             P3002010
      WRITE (NUVI, 3009) MCAVI                                             P3002020
C*****    TEST 12  .LT. EXPRESSION, RELATION, CONSTANT  (TRUE)             P3002030
      MACVI = 12                                                           P3002040
      IF((AMIN1(FLOAT(IDIM(4 - 1,0)) , AIMAG(CMPLX(1.0,2.0)))).LT. 4.0)    P3002050
     1MACVI = 0                                                            P3002060
      WRITE (NUVI, 3009) MACVI                                             P3002070
C*****    TEST 13  .LT.  CONSTANT(D.P.),RELATION, EXPRESSION (REAL)(TRUE)P3002080
      MACVI = 13                                                           P3002090
C*****IF (1.(D0).LT. (SNGL(DABS(DSIGN(DBLE(4.0),1.0D0))))) MACVI = 0       P3002100
C*****WRITE (NUVI, 3009) MACVI                                             P3002110
C*****    TEST 14  .LE. .AND. .LE.  (SHOULD BE LESS AND EQUAL)  (TRUE)     P3002120
      MACVI = 14                                                           P3002130
      IF((REAL(CONJG((1.0,-2.0))) + AIMAG((16.0,-4.0)) .LE.                P3002140
     1     AIMAG(CONJG((1.0,-2.0))) + REAL((-4.0,16.0)) + 1.0) .AND.       P3002150
     2    (AIMAG(CONJG((2.0,-4.0))) + REAL((-8.0,16.0)).LE.                P3002160
     3     REAL(CONJG((4.0,-2.0))) + AIMAG((16.0,-8.0))))MACVI = 0         P3002170
      WRITE (NUVI, 3009) MACVI                                             P3002180
C*****    TEST I5 .LE.  (FALSE)                                            P3002190
      MACVI = 0                                                            P3002200
      IF (MAX1((AMAX0(4,2,-(1 * 4))),16.0) .LE. 2 ** 3)MACVI = 15          P3002210
      WRITE (NUVI, 3009) MACVI                                             P3002220
C*****    TEST 16    .NE. .AND.  .EQ.  (TRUE)                              P3002230
      MACVI = 16                                                           P3002240
      IF(((AINT(AINT(AINT(1.4 + 2.9)+1.6)-8.1)).NE.(-8.0)).AND.(-1.0.EQ.P3002250
     1AINT(AINT(AINT(2.6 + 4.8) + 1.4)-9.2)))MACVI = 0                     P3002260
      WRITE (NUVI, 3009) MACVI                                             P3002270
C*****    TEST 17  .GT.  (TRUE)                                            P3002280
      MACVI = 17                                                           P3002290
      IF((FLOAT(IABS(IFIX(ABS(-5.0+ SIGN(-1.0,2.0)))))) .GT. 2.0D0)        P3002300
     1MACVI = 0                                                         P3002310
      WRITE (NUVI, 3009) MACVI                                          P3002320
C*****   TEST 18  .GE.  EQUAL  (TRUE)                                   P3002330
      MACVI = 18                                                        P3002340
      IF((8.0).GE.(FLOAT(IABS(IFIX(ABS(-4.0+SIGN(4.0,-2.0))))))MACVI=0 P3002350
      WRITE (NUVI, 3009) MACVI                                          P3002360
C*****   TEST 19  .GE.  GREATER (TRUE)                                  P3002370
      MACVI = 19                                                        P3002380
      IF((MACVI).GE.(IABS(IFIX(ABS(-4.0 + SIGN(8.0,-4.0)))))MACVI = 0  P3002390
      WRITE (NUVI, 3009) MACVI                                          P3002400
C*****   TEST 20   .GT.  (FALSE)  .OR.  .EQ. (TRUE)                     P3002410
      MACVI = 20                                                        P3002420
      IF((-MACVI) .GT. (MAX1 (AMAX0(8,-(2*4),4) ,16.0)).OR. .NOT.(IABS  P3002430
     1 (-20) .NE. MACVI))MACVI = 0                                      P3002440
      WRITE (NUVI, 3009) MACVI                                          P3002450
      WRITE (NUVI, 9943)                                                P3002460
9943  FORMAT(28H0 ALL VALUES SHOULD BE ZERO./                           P3002470
     137H  A VALUE OTHER THAN ZERO WILL BE THE /                        P3002480
     234H  NUMBER OF THE TEST WHICH FAILED. )                           P3002490
3008  FORMAT(34H0 THERE SHOULD BE 10 VALUES ABOVE, /                    P3002500
     131H  IF ONLY 9, TEST 9 HAS FAILED.)                               P3002510
3009  FORMAT(12X, I10)                                                  P3002520
C*****    END OF TEST SEGMENT 300                                       P3002530
C*****  WHEN EXECUTING ONLY SEGMENT 300, THE  STOP  AND  END  CARDS     P3002540
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3002550
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3002560
C=    STOP                                                              P3002570
C=    END                                                               P3002580
      STOP                                                              P300C1
      END                                                               P300C2
C***********************************************************************P4110010
C*****                                                                  P4110020
C*****                       SMCQ  - (411)                              P4110030
C*****                                                                  P4110040
C***********************************************************************P4110050
C*****  GENERAL PURPOSE                                                 P4110060
C*****    TO DEFINE SUBROUTINE SMCQ WHICH IS USED IN SEGMENT 300        P4110070
      SUBROUTINE SMCQ(MWVI)                                             P4110080
      MWVI = MWVI + 5                                                   P4110090
      RETURN                                                            P4110100
C*****    END OF TEST SEGMENT 411                                       P4110110
      END                                                               P4110120
C***********************************************************************P3010010
C*****                                                                  P3010020
C*****                       BARIF - (301)                              P3010030
C*****                                                                  P3010040
C***********************************************************************P3010050
C*****  GENERAL PURPOSE                                         ASA REF P3010060
C*****    TEST BASIC FORTRAN ARITHMETIC IF STATEMENT             7.1.2.2P3010070
C*****  GENERAL COMMENTS                                                P3010080
C*****    BASIC INTRINSIC FUNCTIONS ASSUMED WORKING                     P3010090
C*****                                                                  P3010100
C*****  S P E C I F I C A T I O N S  SEGMENT 301                        P3010110
C*****                                                                  P0014100
C*****  WHEN EXECUTING ONLY SEGMENT 301, THE SPECIFICATION STATEMENTS   P0014105
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0014110
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014115
C=    DIMENSION L1I(10)                                                 P0014120
C=    DIMENSION MCA1I(5),CMA1S(5)                                       P0014125
      DIMENSION L1I(10)                                                 P301A1
      DIMENSION MCA1I(5),CMA1S(5)                                       P301A2
C*****                                                                  P0014130
C*****  O U T P U T   T A P E   ASSIGNMENT STATEMENT.  NO INPUT TAPE.   P3010120
C*****                                                                  P0073230
C*****  WHEN EXECUTING ONLY SEGMENT 301, THE FOLLOWING STATEMENT        P0073235
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073240
C*****                                                                  P0073245
C=    NUVI = 6                                                          P0073250
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      NUVI = 6                                                          P301B1
C*****                                                                  P0073255
      WRITE (NUVI,3010)                                                 P3010130
3010  FORMAT (1H1,1X,27HBARIF - (301) BASIC FORTRAN/15X,             24HP3010140
     1 ARITHMETIC IF STATEMENT/2X,18HASA REF. - 7.1.2.2/2X,7HRESULTS)   P3010150
C*****    HEADER FOR SEGMENT 301 WRITTEN                                P3010160
      MCA1I(1) = 5                                                      P3010170
      MCAVI = 0                                                         P3010180
      MCBVI = 21                                                        P3010190
      JACVI = -0                                                        P3010200
      CMA1S(1) = 10.5                                                   P3010210
      CMAVS = -0.0                                                      P3010220
      CMBVS = -15.E0                                                    P3010230
C*****  TEST FOR SIGN OF ZERO - TYPE INTEGER                     4.2/11 P3010240
      DO 8335  IVI = 1,9                                                P3010250
8335  L1I(IVI) = 0                                                      P3010260
      MVI = 1                                                           P3010270
      KVI = 0                                                           P3010280
      JVI = -0                                                          P3010290
      BVS = -0.0                                                        P3010300
      NVI = 1                                                           P3010310
      WRITE (NUVI, 8300)                                                P3010320
      IF (-0) 8311, 8314, 8317                                          P3010330
8320  IF (0) 8312, 8315, 8318                                           P3010340
8321  IF (+0) 8313, 8316, 8319                                          P3010350
8322  NVI = 10                                                          P3010360
      IF (JVI + (-0)) 8311, 8314, 8317                                  P3010370
8323  IF (-IABS(JVI)) 8312, 8315, 8318                                  P3010380
8324  IF (-JVI + (+0)) 8313, 8316, 8319                                 P3010390
8325  WRITE (NUVI, 8303)(L1I(IVI), IVI = 1,9)                           P3010400
C*****   TEST FOR SIGN OF ZERO - TYPE REAL                              P3010410
      MVI = 2                                                           P3010420
      KVI = 0                                                           P3010430
      NVI = 1                                                           P3010440
      DO 8336  IVI = 1,9                                                P3010450
8336  L1I(IVI) = 0                                                      P3010460
      WRITE (NUVI, 8304)                                                P3010470
      IF (-0.0) 8311, 8314, 8317                                        P3010480
8326  IF (0.0) 8312, 8315, 8318                                         P3010490
8327  IF (+0.0) 8313, 8316, 8319                                        P3010500
8328  NVI = 10                                                          P3010510
      IF (BVS +(-0.0)) 8311, 8314, 8317                                 P3010520
8329  IF (-ABS(BVS))  8312, 8315, 8318                                  P3010530
8330  IF (-BVS + (+0.0)) 8313, 8316, 8319                               P3010540
8331  WRITE (NUVI, 8303) (L1I(IVI), IVI = 1,9)                          P3010550
      WRITE (NUVI, 8337)                                                P3010560
      GO TO 8305                                                        P3010570
C*****  SWITCH FOR INTEGER AND REAL TESTS                               P3010580
8332  KVI = KVI + 1                                                     P3010590
      GO TO (8333, 8334) , MVI                                          P3010600
C*****  RETURNS FOR TEST SIGN OF INTEGER ZERO                           P3010610
8333  GO TO (8320, 8321, 8322, 8323, 8324, 8325), KVI                   P3010620
C*****  RETURNS FOR TEST SIGN OF REAL ZERO                              P3010630
8334  GO TO (8326, 8327, 8328, 8329, 8330, 8331), KVI                   P3010640
C*****  TALLY RESULTS OF CONTROL TRANSFERS                              P3010650
8311  L1I(1) = L1I(1) + NVI                                             P3010660
      GO TO 8332                                                        P3010670
8312  L1I(2) = L1I(2) + NVI                                             P3010680
      GO TO 8332                                                        P3010690
8313  L1I(3) = L1I(3) + NVI                                             P3010700
      GO TO 8332                                                        P3010710
8314  L1I(4) = L1I(4) + NVI                                             P3010720
      GO TO 8332                                                        P3010730
8315  L1I(5) = L1I(5) + NVI                                             P3010740
      GO TO 8332                                                        P3010750
8316  L1I(6) = L1I(6) + NVI                                             P3010760
      GO TO 8332                                                        P3010770
8317  L1I(7) = L1I(7) + NVI                                             P3010780
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      GO TO 8332                                                        P3010790
8318  L1I(8) = L1I(8) + NVI                                             P3010800
      GO TO 8332                                                        P3010810
8319  L1I(9) = L1I(9) + NVI                                             P3010820
      GO TO 8332                                                        P3010830
8300  FORMAT(/ 38H  TEST FOR SIGN OF ZERO - TYPE INTEGER// 29H PATH  * FP3010840
     1ORM OF EXPRESSION */ 29H OF IF *  -0  *   0  *  +0  * )           P3010850
8303  FORMAT( 1H ,7(4H****)/ 1H ,4(6X,1H*)/ 8H  NEG. *,3(I4,3H  *)/1H ,4P3010860
     1(6X,1H*)/8H  ZERO *,3(I4,3H  *)/1H ,4(6X,1H*)/8H  POS. *,3(I4,    P3010870
     23H  *)/1H , 4(6X,1H*)/1H )                                        P3010880
8304  FORMAT(//35H  TEST FOR SIGN OF ZERO - TYPE REAL //  29H PATH  * FOP3010890
     1RM OF EXPRESSION */ 29H OF IF * -0.0 *  0.0 * +0.0 * )            P3010900
8337  FORMAT(/34H  ALL ENTRIES SHOULD BE  0  EXCEPT /36H  THE ZERO PATH,P3010910
     1 WHICH SHOULD BE  11 /33H  IN EACH COLUMN. OTHER TESTS MAY   / 31HP3010920
     2  FAIL IF THESE RESULTS DIFFER.///37H  TEST EXPRESSIONS IN  IF  STP3010930
     3ATEMENTS /1H )                                                    P3010940
C*****     ARITHMETIC IF WITH EXPRESSIONS OF TYPE INTEGER               P3010950
C*****     TEST 1 - SHOULD TAKE ZERO BRANCH                             P3010960
8305  IF (MCA1I(1) - 5) 9981,3011,9981                                  P3010970
C*****     TEST 2 - SHOULD TAKE ZERO BRANCH                             P3010980
3011  IF (MCA1I(1) + 5 - IFIX(CMA1S(1))) 9982,3012,9982                 P3010990
C*****     TEST 3 - SHOULD TAKE MINUS BRANCH                            P3011000
3012  IF ((MCBVI * 2 / 7) - IABS(IFIX(10.5 - 10.4)) - 7) 3013,9983,9983 P3011010
C*****     TEST 4 - SHOULD TAKE PLUS BRANCH                             P3011020
3013  IF ((MCA1I(1) - 4) ** 99 /(MCBVI - 4 * MCA1I(1))) 9984,9984,3014  P3011030
C*****     ARITHMETIC IF WITH EXPRESSION OF TYPE REAL                   P3011040
C*****     TEST 5 - SHOULD TAKE ZERO BRANCH                             P3011050
3014  IF (CMA1S(1) - 10.5) 9985,3015,9985                               P3011060
C*****     TEST 6 - SHOULD TAKE MINUS BRANCH                            P3011070
3015  IF (CMA1S(1) * 2.0 -(FLOAT(MCBVI) **1) - 1.0) 3016,9986,9986      P3011080
C*****     TEST 7 - SHOULD TAKE PLUS BRANCH                             P3011090
3016  IF (CMBVS * (-2.0) ** (MCBVI - 4 * MCA1I(1)) - 29.0)9987,9987,3017P3011100
C*****     TEST 8 - SHOULD TAKE ZERO BRANCH                             P3011110
3017  IF (MCAVI) 9988,3018,9980                                         P3011120
3018  WRITE (NUVI,3019)                                                 P3011130
      GO TO 9980                                                        P3011140
3019  FORMAT (  18H  TESTS SUCCESSFUL )                                 P3011150
9981  MCAVI = 1                                                         P3011160
      IF (IABS(MCA1I(1) - 5)) 8301,8302,8301                            P3011170
8301  WRITE (NUVI,9989) MCAVI                                           P3011180
      GO TO 3011                                                        P3011190
8302  WRITE (NUVI,8306) MCAVI                                           P3011200
8306  FORMAT (//2X,14HERROR IN TEST ,I2,23H BECAUSE MINUS ZERO WAS/     P3011210
     1  30H  TREATED AS A NEGATIVE NUMBER)                              P3011220
      GO TO 3011                                                        P3011230
9982  MCAVI = 2                                                         P3011240
      IF (IABS(MCA1I(1) + 5 - IFIX(CMA1S(1)))) 8307,8308,8307           P3011250
8307  WRITE (NUVI,9989) MCAVI                                           P3011260
      GO TO 3012                                                        P3011270
8308  WRITE (NUVI,8306) MCAVI                                           P3011280
      GO TO 3012                                                        P3011290
9983  MCAVI = 3                                                         P3011300
      WRITE (NUVI,9989) MCAVI                                           P3011310
      GO TO 3013                                                        P3011320
9984  MCAVI = 4                                                         P3011330
      WRITE (NUVI,9989) MCAVI                                           P3011340
      GO TO 3014                                                        P3011350
9985  MCAVI = 5                                                         P3011360
      IF (ABS(CMA1S(1) - 10.5)) 8309,8310,8309                          P3011370
8309  WRITE (NUVI,9989) MCAVI                                           P3011380
      GO TO 3015                                                        P3011390
8310  WRITE (NUVI,8306) MCAVI                                           P3011400
      GO TO 3015                                                        P3011410
9986  MCAVI = 6                                                         P3011420
      WRITE (NUVI,9989) MCAVI                                           P3011430
      GO TO 3016                                                        P3011440
9987  MCAVI = 7                                                         P3011450
      WRITE (NUVI,9989) MCAVI                                           P3011460
      GO TO 3017                                                        P3011470
9988  MCAVI = 8                                                         P3011480
      WRITE (NUVI,9989) MCAVI                                           P3011490
9989  FORMAT (  6H  TEST,I2,7H FAILED)                                  P3011500
9980  CONTINUE                                                          P3011510
C*****    END OF TEST SEGMENT 301                                       P3011520
C*****  WHEN EXECUTING ONLY SEGMENT 301, THE  STOP  AND  END  CARDS     P3011530
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3011540
C*****  IN COLUMNS  1  ANO  2  REMOVED.                                 P3011550
C=    STOP                                                              P3011560
C=    END                                                               P3011570
      STOP                                                              P301C1
      END                                                               P301C2
C***********************************************************************P3020010
C*****                                                                  P3020020
C*****                       FARIF - (302)                              P3020030
C*****                                                                  P3020040
C***********************************************************************P3020050
C*****  GENERAL PURPOSE                                         ASA REF P3020060
C*****    TEST OF FULL FORTRAN ARITHMETIC IF STATEMENT           7.1.2.2P3020070
C*****    GENERAL COMMENTS                                              P3020080
C*****    INTRINSIC FUNCTIONS ASSUMEO WORKING                           P3020090
C*****                                                                  P3020100
C*****  S P E C I F I C A T I O N S  SEGMENT 302                        P3020110
C*****                                                                  P0014140
C*****  WHEN EXECUTING ONLY SEGMENT 302, THE SPECIFICATION STATEMENTS   P0014145
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0014150
C*****  IN COLUMNS  1  ANO  2  REMOVED.                                 P0014155
C*****                                                                  P0014160
C=    OIMENSION MCA1I(5),AC2S(5,6)                                      P0014165
C=    DOUBLE PRECISION MCAVD,MCBVD                                      P0014170
C=    COMPLEX CHAVC                                                     P0014175
      DIMENSION MCA1I(5),AC2S(5,6)                                      P302A1
      DOUBLE PRECISION MCAVD,MCBVD                                      P302A2
      COMPLEX CHAVC                                                     P302A3
C*****                                                                  P0014180
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P3020120
C*****                                                                  P0073260
C*****  WHEN EXECUTING ONLY SEGMENT 302, THE FOLLOWING STATEMENT        P0073265
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 ANO 2 REMOVEO.          P0073270
C*****                                                                  P0073275
C=    NUVI = 6                                                          P0073280
      NUVI = 6                                                          P302B1
C*****                                                                  P0073285
      WRITE (NUVI,3020)                                                 P3020130
3020  FORMAT (1H1,1X,26HFARIF - (302) FULL FORTRAN/  16X,24HARITHMETIC IP3020140
     1F STATEMENTS/                                                     P3020150
     220H  ASA REF. - 7.1.2.2/2X,7HRESULTS)                             P3020160
C*****    HEADER FOR SEGMENT 302 WRITTEN                                P3020170
      MCA1I(1) = 5                                                      P3020180
      MCAVI = 0                                                         P3020190
       AC2S(1,1) = 10.5                                                 P3020200
      MCAVO = -15.000                                                   P3020210
      CHAVC = (1.0,2.0)                                                 P3020220
      MCBVO = -0.0D0                                                    P3020230
C*****    ARITHMETIC IF WITH EXPRESSION OF TYPE DOUBLE PRECISION        P3020240
C*****    TEST THAT MINUS ZERO IS TREATEO AS ZERO                 4.2/11P3020250
      IF (MCBVO) 9301,9303,9301                                         P3020260
9301  WRITE (NUVI,9302)                                                 P3020270
9302  FORMAT (//2X,37HERROR, MINUS ZERO TREATEO AS NEGATIVE/            P3020280
     1 36H  NUMBER - OTHER TESTS MAY FAIL AS A/                         P3020290
     2 8H  RESULT)                                                      P3020300
      MCAVI = 0                                                         P3020310
C*****    TEST 1 - SHOULO TAKE ZERO BRANCH                              P3020320
9303  IF (MCAVD + 15.0D0) 3028,3021,3028                                P3020330
C*****    TEST 2 - SHOULD TAKE MINUS BRANCH                             P3020340
3021  IF (MCAVO / DBLE(FLOAT(MCA1I(1))) * 2.00) 3022,3029,3029          P3020350
C*****    TEST 3 - SHOULD TAKE MINUS BRANCH                             P3020360
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3022  IF (MCAVD/(-15.0D0) + 6.0D0 - 2.0D0 ** 3) 3023,9971,9971          P3020370
C*****     TEST 4 - SHOULD TAKE PLUS BRANCH                              P3020380
3023  IF (DSIGN(1.0D0,DBLE(REAL(CHAVC)))) 9972,9972,3024                P3020390
C*****     TEST 5 - SHOULD TAKE ZERO BRANCH                              P3020400
3024  IF (2.0D0 ** 2 - 4.0D0/ 1.0D0) 9973, 3025, 9973                   P3020410
3025  IF (MCAVI) 9974,3026,9970                                         P3020420
3026  WRITE (NUVI,3027)                                                 P3020430
      GO TO 9970                                                        P3020440
3027  FORMAT (//34H  SEGMENT 302 TESTED SUCCESSFULLY.)                  P3020450
3028  MCAVI = 1                                                         P3020460
      IF (DABS(MCAVD + 15.0D0))9304,9305,9304                           P3020470
9304  WRITE (NUVI,9975) MCAVI                                           P3020480
      GO TO 3021                                                        P3020490
9305  WRITE (NUVI,9306) MCAVI                                           P3020500
9306  FORMAT (//2X,14HERROR IN TEST ,I2,23H BECAUSE MINUS ZERO WAS/     P3020510
     1  30H  TREATED AS A NEGATIVE NUMBER)                              P3020520
      GO TO 3021                                                        P3020530
3029  MCAVI = 2                                                         P3020540
      WRITE (NUVI,9975) MCAVI                                           P3020550
      GO TO 3022                                                        P3020560
9971  MCAVI = 3                                                         P3020570
      WRITE (NUVI,9975) MCAVI                                           P3020580
      GO TO 3023                                                        P3020590
9972  MCAVI = 4                                                         P3020600
      WRITE (NUVI,9975) MCAVI                                           P3020610
      GO TO 3024                                                        P3020620
9973  MCAVI = 5                                                         P3020630
      IF (DABS(2.0D0 ** 2 - 4.0D0 / 1.0D0)) 9307, 9308, 9307            P3020640
9307  WRITE (NUVI,9975) MCAVI                                           P3020650
      GO TO 3025                                                        P3020660
9308  WRITE (NUVI,9306) MCAVI                                           P3020670
      GO TO 3025                                                        P3020680
9974  MCAVI = 6                                                         P3020690
      WRITE (NUVI,9975) MCAVI                                           P3020700
9975  FORMAT (//6H  TEST,I3,8H FAILED.)                                 P3020710
9970  CONTINUE                                                          P3020720
C*****     END OF TEST SEGMENT 302                                      P3020730
C*****   WHEN EXECUTING ONLY SEGMENT 302, THE  STOP  AND  END  CARDS    P3020740
C*****   WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                P3020750
C*****   IN COLUMNS  1  AND  2  REMOVED.                                P3020760
C=    STOP                                                              P3020770
C=    END                                                               P3020780
      STOP                                                              P302C1
      END                                                               P302C2
C***********************************************************************P3100010
C*****                                                                  P3100020
C*****                       IOFMT - (310)                              P3100030
C*****                                                                  P3100040
C***********************************************************************P3100050
C*****  GENERAL PURPOSE                                         ASA REFSP3100060
C*****    TO TEST ADDITIONAL FEATURES OF FORMATTED READ        7.1.3.2.2P3100070
C*****    AND WRITE STATEMENTS AND FORMAT STATEMENTS           7.1.3.2.3P3100080
C*****  RESTRICTIONS OBSERVED                                           P3100090
C*****  *  ALL FORMAT STATEMENTS ARE LABELED                  7.2.3  /57P3100100
C*****  *  H AND X DESCRIPTORS ARE NEVER REPEATED             7.2.3.3/54P3100110
C*****  *  FOR W.D DESCRIPTORS, D IS ALWAYS SPECIFIED AND     7.2.3.1/31P3100120
C*****     W IS EQUAL TO OR GREATER THAN D                    7.2.3.1/33P3100130
C*****  *  FIELD WIDTH IS NEVER ZERO                          7.2.3  /18P3100140
C*****  *  IF THERE IS AN I/O LIST, THE FORMAT STATEMENT      7.2.3.4/22P3100150
C*****     CONTAINS AT LEAST ONE FIELD DESCRIPTOR (OTHER                P3100160
C*****     THAN H OR X)                                                 P3100170
C*****  *  ITEMS IN I/O LIST CORRESPOND TO FORMAT DESCRIPTORS 7.2.3.4/36P3100180
C*****  *  NEGATIVE OUTPUT VALUES ARE SIGNED                  7.2.3.6/56P3100190
C*****  *  FIELD WIDTH NEVER EXCEEDED BY OUTPUT               7.2.3.6/01P3100200
C*****  *  FOR I CONVERSION, EXTERNAL INPUT FIELDS ARE      7.2.3.6.1/07P3100210
C*****     INTEGER CONSTANTS                                            P3100220
C  INPUT DATA TO THIS SEGMENT CONSISTS OF 38 CARD IMAGES IN COL. 1 - 80 P3100230
C    COLS.         22  25  31  34-35  40-43  55  67  69  74-76          P3100240
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CARD  1            .   .   .     0.   E+00   +   +   .    E00           P3100250
C    COLS.        16  31  33  42-45  50  59-60                          P3100260
CARD  2            +   +   .   D+00   .     D0                          P3100270
C    COLS. 1-----------14  18-----26  28-------38  42-------------58    P3100280
CARD 3     1.23456987654.  +1.234E-0  -98.7654E+0  + 2345.67891011+2    P3100290
C    COLS.  69-----78                                                   P3100300
CARD 3     -.109876-4                                                   P3100310
C    COLS        1---5                                                  P3100320
CARDS 4,5,6,7,8   12345                                                 P3100330
C    COLS.        1-3                                                   P3100340
CARDS 9,10,11,12  1.1                                                   P3100350
C    COLS. 1------------------------------------------------------58    P3100360
CARD 13    +0.339567E+02                                                P3100370
CARD 14      + .339567+2                                                P3100380
CARD 15     + 3.395670E1                                                P3100390
CARD 16     0.96295134244D+04                                           P3100400
CARD 17       .96295134244D04                                           P3100410
CARD 18       0.96295134244+4                                           P3100420
CARD 19     0.96295134244D+04                                           P3100430
CARD 20    31.23+0.14E+04+0.2D+02                                       P3100440
CARD 21    31.23  .14E+04   +.2+2                                       P3100450
CARD 22    -0.13579E+054444                                             P3100460
CARD 23    4444                                                         P3100470
CARD 24    4444                                                         P3100480
CARD 25    4444                                                         P3100490
CARD 26    4444                                                         P3100500
CARD 27    -333 5.555+0.4545E-04                                        P3100510
CARD 28    -6.666   .9989E+12                                           P3100520
CARD 29    7.77-0.747E-02  +0.549E022                                   P3100530
CARD 30    +0.662E-00  0.468-1011                                       P3100540
CARD 31     0.59542D+04-44.6666-0.1234567890D-03                        P3100550
CARD 32     54.9327-0.1395624534D+00                                    P3100560
CARD 33    65432.1                                                      P3100570
CARD 34    +0.848E+03    .848E3 + .1290D7+0.129D+07  0.412D21           P3100580
CARD 35    22222222222222222222222222222222222222222222222222           P3100590
CARD 36       -.987E0-0.987E+00    +0.6D0 + 0.6D+00   .368D-5           P3100600
CARD 37       5   5   5   5                                             P3100610
CARD 38        987654   8647.86   987.654                               P3100620
CARD COLS. NOT MENTIONED ARE BLANK                                      P3100630
C*****                                                                  P3100640
C*****    READ AND WRITE STATEMENTS FOR ENTIRE SEGMENT FDLLOW           P3100650
C*****                                                                  P3100660
C*****    TEST THAT COMPLETELY BLANK FIELDS IN THE INPUT      7.2.3.6/45P3100670
C*****    ARE TREATED AS ZEROS. (ALL VARIABLES AND ARRAY                P3100680
C*****    ELEMENTS USED IN THIS TEST ARE FIRST SET TO                   P3100690
C*****    NON-ZERO VALUES.  I, E, F AND D DESCRIPTORS                   P3100700
C*****    APPEAR IN THE CORRESPONDING FORMAT STATEMENT                  P3100710
C*****                                                                  P3100720
C*****  S P E C I F I C A T I O N S  SEGMENT 310                        P3100730
C*****                                                                  P0014190
C*****  WHEN EXECUTING ONLY SEGMENT 310, THE SPECIFICATION STATEMENTS  P0014195
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0014200
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014205
C*****                                                                  P0014210
C=    DIMENSION A1S(5),A2S(2,2),A3S(3,3,3),EP1S(33)                     P0014215
C=    DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6)                  P0014220
C=    INTEGER MCA3I(2,3,3)                                              P0014225
C=    REAL MVS                                                          P0014230
C=    DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,A1D(4),A2D(2,2),A3D(2,2,2)    P0014235
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPHVD,AAAVD  P0014240
      DIMENSION A1S(5),A2S(2,2),A3S(3,3,3),EP1S(33)                     P310A1
      DIMENSION IAC1I(5),IAC2I(2,7),AC1S(25),AC2S(5,6)                  P310A2
      INTEGER MCA3I(2,3,3)                                              P310A3
      REAL MVS                                                          P310A4
      DOUBLE PRECISION  MCAVD,MCBVD,MCCVD,A1D(4),A2D(2,2),A3D(2,2,2)    P310A5
      DOUBLE PRECISION DPAVD,DPBVD,DPCVD,DPDVD,DPEVD,DPFVD,DPHVD,AAAVD  P310A6
C*****                                                                  P0014245
C*****  I N P U T - O U T P U T       TAPE ASSIGNMENT STATEMENTS        P3100740
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C*****                                                                  P0073290
C*****  WHEN EXECUTING ONLY SEGMENT 310, THE FOLLOWING STATEMENTS       P0073295
C*****  NUVI = 6 , IRVI = 5 MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.P0073300
C=    NUVI = 6                                                          P0073305
C=    IRVI = 5                                                          P0073310
      NUVI = 6                                                          P310B1
      IRVI = 5                                                          P310B2
C*****                                                                  P0073315
C*****    HEADER FORMAT STATEMENT                                       P3100750
3100  FORMAT (1H1,1X,38HIOFMT - (310) ADDITIONAL FORMATTED I/O          P3100760
     1  //2X,38HASA REFS - 7.1.3.2.2  7.1.3.2.3  7.2.3//2X,7HRESULTS)   P3100770
      WRITE (NUVI,3100)                                                 P3100780
      JACVI = 11111                                                     P3100790
      IAC1I(1) = -2345                                                  P3100800
      IAC2I(1,1) = 9999                                                 P3100810
      MCA3I(1,1,1) = 2                                                  P3100820
      ACVS = 1.2                                                        P3100830
      BCVS = -.34E-3                                                    P3100840
      A1S(1) = 34.56                                                    P3100850
      A1S(2) = 456.789E+02                                              P3100860
      A2S(1,1) = -7899.3                                                P3100870
      A2S(2,1) = +9876.543E-01                                          P3100880
      A3S(1,1,1) = .543                                                 P3100890
      A3S(2,1,1) = 4.33E+1                                              P3100900
      AAAVD = +2.22D+01                                                 P3100910
      A1D(1) = -.33456D-01                                              P3100920
      A2D(1,1) = 9987.76D+2                                             P3100930
      A3D(1,1,1) = 44.D-2                                               P3100940
C*****    FORMATS TO TEST THAT BLANK INPUT FIELDS ARE         7.2.3.6/45P3100950
C*****    TREATED AS ZEROS. I, E, F AND D FIELDS ARE TESTED             P3100960
C*****  CARDS 1 AND 2                                                   P3100970
3101  FORMAT (4(I5), 4(F3.1), 4(E11.4)/ 4(D15.8))                       P3100980
      READ (IRVI,3101) JACVI, IAC1I(1), IAC2I(1,1), MCA3I(1,1,1), ACVS, P3100990
     1     A1S(1), A2S(1,1), A3S(1,1,1), BCVS, A1S(2), A2S(2,1),        P3101000
     2     A3S(2,1,1), AAAVD, A1D(1), A2D(1,1), A3D(1,1,1)              P3101010
3102  FORMAT ( /2X,16HTEST BLANK INPUT/2X,26HEACH ANSWER SHOULD BE ZERO,P3101020
     1  4(/I6)  / 4(/F8.1) / 4(/E12.1) / 4(/D12.1))                     P3101030
      WRITE (NUVI,3102) JACVI, IAC1I(1), IAC2I(1,1), MCA3I(1,1,1), ACVS,P3101040
     1     A1S(1), A2S(1,1), A3S(1,1,1), BCVS, A1S(2), A2S(2,1),        P3101050
     2     A3S(2,1,1), AAAVD, A1D(1), A2D(1,1), A3D(1,1,1)              P3101060
C*****    TEST THAT DECIMAL POINTS APPEARING IN INPUT FIELDS  7.2.3.6/47P3101070
C*****    OVERRIDE THE SPECIFICATIONS SUPPLIED BY E, F AND              P3101080
C*****    D FIELD DESCRIPTORS                                           P3101090
3103  FORMAT (/34H  TEST DEC. PT. SPECIFIED BY INPUT/ 36H  3 LINES IN EAP3101100
     1CH GROUP SHOULD MATCH / 26H  * LINE IS HOLLERITH DATA )           P3101110
      WRITE (NUVI,3103)                                                 P3101120
      CMAVS = 1.23456                                                   P3101130
      CMBVS = 987654.                                                   P3101140
      CMEVS = 0.1234E+01                                                P3101150
      CMFVS = -0.987654E+02                                             P3101160
      DPAVD = 0.234567891011D+06                                        P3101170
      DPBVD = -0.109876D-04                                             P3101180
C*****  CARD 3                                                          P3101190
3104  FORMAT (2(F7.3), 2(E12.5), 2(D20.11))                             P3101200
      READ (IRVI,3104) ACVS, BCVS, FFCVS, GGCVS, MCAVD, MCBVD           P3101210
3105  FORMAT (/12H  *  1.23456,2(/F12.5)//13H  *  987654.0,2(/F13.1) /  P3101220
     1 /15H  *  0.1234E+01,2(/E15.4)//17H  * -0.987654E+02,2(/E17.6) /  P3101230
     2 /23H  *  0.234567891011D+06, 2(/D23.12)//17H  * -0.109876D-04,   P3101240
     3  2(/D17.6) )                                                     P3101250
      WRITE (NUVI,3105) CMAVS, ACVS, CMBVS, BCVS, CMEVS, FFCVS, CMFVS,  P3101260
     1     GGCVS, DPAVD, MCAVD, DPBVD, MCBVD                            P3101270
C*****    TEST SIMPLE REPETITION OF FORMAT DESCRIPTORS        7.2.3.4/  P3101280
C*****    WHEN ADDITIONAL ITEMS REMAIN IN AN I/O LIST       7.1.3.2.1/  P3101290
C*****    AND THE LAST RIGHT PARENTHESIS HAS BEEN REACHED               P3101300
C*****    IN THE CORRESPONDING FORMAT STATEMENT                         P3101310
3106  FORMAT (   35H1 TEST FORMAT DESCRIPTOR REPETITION/ 32H  ALL LINES P3101320
     1IN EACH GROUP SHOULD/ 14H  BE IDENTICAL)                          P3101330
      WRITE (NUVI,3106)                                                 P3101340
      JACVI = +12345                                                    P3101350
      KBCVI = 3                                                         P3101360
      CMAVS = 1.1                                                       P3101370
      CMBVS = 1.23                                                      P3101380
      CMEVS = 33.9567                                                   P3101390
      CMGVS = 1.4E+03                                                   P3101400
      DPAVD = 962951342.44D-5                                           P3101410
      DPBVD = 2.0D1                                                     P3101420
C*****  CARDS 4, 5, 6, 7, 8                                             P3101430
3107  FORMAT (I5)                                                       P3101440
      READ (IRVI,3107) IAC1I                                            P3101450
C*****  CARDS 9, 10, 11, 12                                             P3101460
3108  FORMAT (F3.1)                                                     P3101470
      READ (IRVI,3108) A2S                                              P3101480
C*****  CARDS 13, 14, 15                                                P3101490
9320  FORMAT (E13.6)                                                    P3101500
      READ (IRVI,9320) A1S(1), HHCVS, A1S(2)                            P3101510
C*****  CARDS 16, 17, 18, 19                                            P3101520
9321  FORMAT (D18.11)                                                   P3101530
      READ (IRVI,9321) A2D                                              P3101540
C*****  CARDS 20, 21                                                    P3101550
9322  FORMAT (I1,F4.2,E9.2,D8.1)                                        P3101560
      READ (IRVI,9322) LCCVI, DCVS, AC2S(5,6), A3D(1,2,2), MDCVI, FFCVS,P3101570
     1     GGCVS, AAAVD                                                 P3101580
9323  FORMAT ( /10H  *  12345)                                          P3101590
      WRITE (NUVI,9323)                                                 P3101600
9324  FORMAT (I10)                                                      P3101610
      WRITE (NUVI,9324) JACVI, IAC1I                                    P3101620
9325  FORMAT (/ 8H  *  1.1)                                             P3101630
      WRITE (NUVI,9325)                                                 P3101640
9326  FORMAT (F8.1)                                                     P3101650
      WRITE (NUVI,9326) CMAVS, A2S                                      P3101660
9329  FORMAT (/17H  *  0.339567E+02)                                    P3101670
      WRITE (NUVI,9329)                                                 P3101680
9330  FORMAT (E17.6)                                                    P3101690
      WRITE (NUVI,9330) CMEVS, A1S(1), HHCVS, A1S(2)                    P3101700
9331  FORMAT (/22H  *  0.96295134244D+04)                               P3101710
      WRITE (NUVI,9331)                                                 P3101720
9332  FORMAT (D22.11)                                                   P3101730
      WRITE (NUVI,9332) DPAVD, A2D                                      P3101740
9333  FORMAT (/31H  *  3  1.23  0.14E+04  0.2D+02)                      P3101750
      WRITE (NUVI,9333)                                                 P3101760
9334  FORMAT (I6,F6.2,E10.2,D9.1)                                       P3101770
      WRITE (NUVI,9334) KBCVI, CMBVS, CMGVS, DPBVD, LCCVI, DCVS,        P3101780
     1     AC2S(5,6), A3D(1,2,2), MDCVI, FFCVS, GGCVS, AAAVD            P3101790
C*****    TEST THAT FORMAT CONTROL PASSES TO THE GROUP        7.2.3.4/03P3101800
C*****    ENCLOSED BY THE LAST PRECEDING RIGHT PAREN.       7.1.3.2.1/39P3101810
C*****    WHEN THE I/O LIST CONTAINS MORE ELEMENTS THAN                 P3101820
C*****    THE NUMBER OF DESCRIPTORS IN THE FORMAT STMNT.                P3101830
      JACVI = +4444                                                     P3101840
      KBCVI = -333                                                      P3101850
      LCCVI = 22                                                        P3101860
      MDCVI = 11                                                        P3101870
      ACVS = 5.555                                                      P3101880
      BCVS = -6.666                                                     P3101890
      CCVS = +7.77                                                      P3101900
      DCVS = 65432.1                                                    P3101910
      CMAVS = -0.13579E+5                                               P3101920
      CMBVS = 0.4545E-04                                                P3101930
      CMCVS = 0.9989E12                                                 P3101940
      CMDVS = -0.747E-2                                                 P3101950
      CMEVS = +0.549E+00                                                P3101960
      CMFVS = 0.662E-0                                                  P3101970
      CMGVS = 0.468E-10                                                 P3101980
      DPAVD = +59.542D02                                                P3101990
      DPBVD = -0.0123456789D-2                                          P3102000
      DPCVD = -1395624534.D-10                                          P3102010
      DPDVD = +129.D4                                                   P3102020
      DPEVD = 4.12D+20                                                  P3102030
      DPFVD = 36.8D-7                                                   P3102040
      DPHVD = 0.6D00                                                    P3102050
      FFCVS = -44.6666                                                  P3102060
      GGCVS = +.549327E+2                                               P3102070
      HHCVS = 848.                                                      P3102080
      MVS = -.987                                                       P3102090
      CMHVS = 1.23E-1                                                   P3102100
      CMIVS = 646.E-2                                                   P3102110
C*****  CARDS 22, 23, 24, 25, 26                                        P3102120
9335  FORMAT ( E12.5, (I4))                                             P3102130
      READ (IRVI,9335) A1S(2), IAC1I                                    P3102140
C*****  CARDS 27, 28                                                    P3102150
9336  FORMAT (I4, (F6.3), E11.4)                                        P3102160
      READ (IRVI,9336) MRRVI, AC1S(1), EP1S(1), A3S(1,1,1), AC2S(2,2)   P3102170
C*****  CARDS 29, 30                                                    P3102180
9337  FORMAT (F4.2, (2(E10.3)), I2)                                     P3102190
      READ (IRVI,9337) A2S(2,2), A3S(2,1,1), EP1S(2), MCA3I(1,1,1),     P3102200
     1     BVS, AC2S(2,1), NECVI                                        P3102210
C*****  CARDS 31, 32                                                    P3102220
9338  FORMAT (D12.5, (F8.4,  D17.10))                                   P3102230
      READ (IRVI,9338) MCAVD, EP1S(3), A1D(1), A2S(1,2), A2D(2,1)       P3102240
C*****  CARDS 33, 34, 35, 36                                            P3102250
C*****  THIS READ CAUSES AN INPUT DATA CARD TO BE SKIPPED               P3102260
9339  FORMAT( F7.1, (/2(E10.3), 2(D10.3)), D10.3)                       P3102270
      READ (IRVI,9339)  CVS, A2S(2,1), A3S(1,2,2), A3D(1,1,1),          P3102280
     1                  A3D(1,2,1), A2D(2,2), A3S(1,2,1), EP1S(4),      P3102290
     2                  A1D(2), MCBVD, MCCVD                            P3102300
9340  FORMAT (/16H  * -0.13579E+05,2(/E16.5)//9H  *  4444,6(/I9))       P3102310
      WRITE (NUVI,9340) CMAVS, A1S(2), JACVI, IAC1I                     P3102320
9341  FORMAT (/ 8H  * -333, 2(/I8)/ 10H1 *  5.555,  2(/F10.3) //        P3102330
     115H  *  0.4545E-04, 2(/E15.4)// 10H  * -6.666, 2(/F10.3) //       P3102340
     215H  *  0.9989E+12, 2(/E15.4))                                    P3102350
      WRITE (NUVI,9341) KBCVI, MRRVI, ACVS, AC1S(1), CMBVS, EP1S(1),    P3102360
     1     BCVS, A3S(1,1,1), CMCVS, AC2S(2,2)                           P3102370
9342  FORMAT (/9H  *  7.77 ,2(/F9.2)//14H  * -0.747E-02, 2(/E14.3) //   P3102380
     1  14H  *  0.549E+00, 2(/E14.3) //7H  *  22, 2(/I7) //             P3102390
     2  14H  *  0.662E+00, 2(/E14.3) //14H  *  0.468E-10, 2(/E14.3) //  P3102400
     3   7H  *  11, 2(/I7) )                                            P3102410
      WRITE (NUVI,9342) CCVS, A2S(2,2), CMDVS, A3S(2,1,1), CMEVS,       P3102420
     1     EP1S(2), LCCVI, MCA3I(1,1,1), CMFVS, BVS, CMGVS, AC2S(2,1),  P3102430
     2     MDCVI, NECVI                                                 P3102440
9343  FORMAT (/16H  *  0.59542D+04,2(/D16.5)//12H  * -44.6666,2(/F12.4)/P3102450
     1/21H  * -0.1234567890D-03,2(/D21.10)/12H1 *  54.9327,2(/F12.4)//  P3102460
     2 21H  * -0.1395624534D+00,2(/D21.10) )                            P3102470
      WRITE (NUVI,9343) DPAVD, MCAVD, FFCVS, EP1S(3), DPBVD, A1D(1),    P3102480
     1     GGCVS, A2S(1,2), DPCVD, A2D(2,1)                             P3102490
9344  FORMAT (/12H  *  65432.1/ 2(F12.1/) / 14H  *  0.848E+03/          P3102500
     1  3(E14.3/) / 14H  *  0.129D+07/ 3(D14.3/) / 14H  *  0.412D+21/   P3102510
     2  2(D14.3/) / 14H  * -0.987E+00/ 3(E14.3/) / 12H  *  0.6D+00/     P3102520
     3  3(D12.1/) / 14H  *  0.368D-05, 2(/D14.3) )                      P3102530
      WRITE (NUVI,9344) DCVS, CVS, HHCVS, A2S(2,1), A3S(1,2,2), DPDVD,  P3102540
     1                  A3D(1,1,1), A3D(1,2,1), DPEVD, A2D(2,2),        P3102550
     2                  MVS, A3S(1,2,1), EP1S(4), DPHVD, A1D(2), MCBVD, P3102560
     3                  DPFVD, MCCVD                                    P3102570
9345  FORMAT (/14H  *  0.777E+01/ (E14.3))                              P3102580
      WRITE (NUVI,9345) CCVS, A2S(2,2)                                  P3102590
9346  FORMAT (/ 22H  * -333   0.59542D+04/I8, D14.5 )                   P3102600
      WRITE (NUVI,9346) KBCVI, DPAVD, MRRVI, MCAVD                      P3102610
9347  IF (MRRVI - 5) 9348, 9349, 9348                                   P3102620
C*****  CARD 37                                                         P3102630
9348  READ (IRVI, 9336) MRRVI                                           P3102640
      GO TO 9347                                                        P3102650
C*****  *  ADDITIONAL  SCALE FACTOR ON INPUT-OUTPUT                     P3102660
C*****  CARD 38                                                         P3102670
9349  READ(IRVI, 9327) A1S(3), A1S(4), A1D(4)                           P3102680
9327  FORMAT (  1PE10.3, -1PE10.2, D10.3)                               P3102690
      WRITE(NUVI, 9328) A1S(3), A1S(4), A1D(4)                          P3102700
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9328  FORMAT(//22H1 SCALE FACTOR ON READ/ 31H  IN ORDER OF FORMAT OCCURRP3102710
     2ENCE/28H  NO EXPONENT ON INPUT DATA //                            P3102720
     3  40H  CARD    987654     8647.86     987.654/                    P3102730
     4  40H  DESC   1PE10.3    -1PE10.2       D10.3/                    P3102740
     5  40H  TO BE .988E+02   .8648E+05   .9877D+04/                    P3102750
     6  4H  IS,     E12.3,      E12.4,      D12.4)                      P3102760
C*****    END OF TEST SEGMENT 310                                       P3102770
C*****  WHEN EXECUTING ONLY SEGMENT 310, THE  STOP  AND  END  CARDS     P3102780
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3102790
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3102800
C=    STOP                                                              P3102810
C=    END                                                               P3102820
      STOP                                                              P310C1
      END                                                               P310C2
                     .  .     . 0.    E+00           +           + .    E00
               +              + .        D+00    .       D0
1.23456987654.   +1.234E-0 -98.7654E+0   + 2345.67891011+2          -.109876-4
12345
12345
12345
12345
12345
1.1
1.1
1.1
1.1
+0.339567E+02
  + .339567+2
 + 3.395670E1
 0.96295134244D+04
   .96295134244D04
   0.96295134244+4
 0.96295134244D+04
31.23+0.14E+04+0.2D+02
31.23  .14E+04  +.2+2
-0.13579E+054444
4444
4444
4444
4444
-333 5.555+0.4545E-04
-6.666  .9989E+12
7.77-0.747E-02  +0.549E022
+0.662E-00  0.468-1011
 0.59542D+04-44.6666-0.1234567890D-03
 54.9327-0.1395624534D+00
65432.1
+0.848E+03   .848E3 + .1290D7+0.129D+07  0.412D21
22222222222222222222222222222222222222222222222222
   -.987E0-0.987E+00   +0.6D0 + 0.6D+00   .368D-5
   5   5   5   5
    987654  8647.86   987.654
C***********************************************************************P3120010
C*****                                                                  P3120020
C*****                       RDFMT - (312)                              P3120030
C*****                                                                  P3120040
C***********************************************************************P3120050
C*****  GENERAL PURPOSE                                         ASA REFSP3120060
C*****    TO TEST FORMATTED READ AND WRITE STATEMENTS           7.2.3.10P3120070
C*****    IN WHICH THE FORMAT STATEMENT IS CONTAINED IN                 P3120080
C*****    AN ARRAY                                                      P3120090
C*****  RESTRICTIONS OBSERVED                                           P3120100
C*****  * AN H DESCRIPTOR MAY NOT BE PART OF A FORMAT        7.2.3.10/48P3120110
C*****    STATEMENT IN AN ARRAY                                         P3120120
C*****  *  ALL FORMAT STATEMENTS ARE LABELED                  7.2.3  /57P3120130
C*****  *  H AND X DESCRIPTORS ARE NEVER REPEATED             7.2.3.3/54P3120140
C*****  *  FOR W.D DESCRIPTORS, D IS ALWAYS SPECIFIED AND     7.2.3.1/31P3120150
C*****     W IS EQUAL TO OR GREATER THAN D                    7.2.3.1/33P3120160
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C*****  *  FIELD WIDTH IS NEVER ZERO                          7.2.3  /18P3120170
C*****  *  IF THERE IS AN I/O LIST, THE FORMAT STATEMENT      7.2.3.4/22P3120180
C*****     CONTAINS AT LEAST ONE FIELD DESCRIPTOR (OTHER                P3120190
C*****     THAN H OR X)                                                 P3120200
C*****  *  ITEMS IN I/O LIST CORRESPOND TO FORMAT DESCRIPTORS 7.2.3.4/36P3120210
C*****  *  NEGATIVE OUTPUT VALUES ARE SIGNED                  7.2.3.6/56P3120220
C*****  *  FIELD WIDTH NEVER EXCEEDED BY OUTPUT               7.2.3.6/01P3120230
C*****  *  FOR I CONVERSION, EXTERNAL INPUT FIELDS ARE      7.2.3.6.1/07P3120240
C*****     INTEGER CONSTANTS                                            P3120250
C*****  TEST HOLLERITH IN ARGUMENT OF A CALL                            P3120260
C*****      ARRAY NAME IN ARGUMENT LIST USED AS FORMAT SPECIFIER        P3120270
C*****      SUBROUTINE FMTQ ALSO TESTS THE EMPTY FORMAT STATEMENT       P3120280
C*****    THE FOLLOWING DATA STATEMENTS INITIALIZE SOME      7.2.3.10/50P3120290
C*****    ARRAYS WITH FORMAT STATEMENTS TO BE USED FOR                  P3120300
C*****    READING WITH A, F AND D CONVERSION AND FOR                    P3120310
C*****    WRITING WITH I, E AND L CONVERSION                            P3120320
C*****                                                                  P3120330
C INPUT DATA TO THIS SEG. CONSISTS OF 13 CARD IMAGES IN COLS. 1 - 80    P3120340
C     COLS. 1-----------------------------------------------50           P3120350
CARD 1     (I5,6X,  I4, 2(I3),  I2)                                     P3120360
CARD 2     (E   9.2,3(E13.6))                                           P3120370
CARD 3     ( L1 ,2(L2),L3)                                              P3120380
CARD 4     (2X,A2,5(A2))                                                P3120390
CARD 5     (2X,F5.3,   F4.0, 2(F7.2))                                   P3120400
CARD 6     (2X , D 16.9,D9.2)                                           P3120410
CARD 7      4756      -867224+39-6                                      P3120420
CARD 8     23498.-77.27547.18                                           P3120430
CARD 9     -.0076+11+08.93421E-13  893.421E-15+08.93421E-13             P3120440
CARD 10    -0.357901246D+00 +0.52D-2                                    P3120450
CARD 11    TTA FF9$                                                     P3120460
CARD 12    AB                                                           P3120470
CARD 13      CDE+*=123                                                  P3120480
CARD COLS. NOT MENTIONED ARE BLANK                                      P3120490
C*****                                                                  P3120500
C*****  S P E C I F I C A T I O N S  SEGMENT 312                        P3120510
C*****                                                                  P0014250
C*****  WHEN EXECUTING ONLY SEGMENT 312, THE SPECIFICATION STATEMENTS   P0014255
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0014260
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014265
C*****                                                                  P0014270
C=    DIMENSION  L1I(10),A3S(3,3,3),YER1S(7),IAC1I(5),AC1S(25)          P0014275
C=    DIMENSION 2U3S(3,2,2),2T1S(4),2U1S(12),2U2S(4,2),IAC2I(2,7)       P0014280
C=    INTEGER AVI,IU2I(4,2),IT3I(4,2,2),IU3I(2,3,3),MCA3I(2,3,3)        P0014285
C=    LOGICAL AVB,BVB,CVB,GG1B(2),A1B(2)                                P0014290
C=    DOUBLE PRECISION DPAVD,DPBVD,DPCVD,A1D(4)                         P0014295
C=    COMPLEX CHAVC,CHBVC                                               P0014300
      DIMENSION  L1I(10),A3S(3,3,3),YER1S(7),IAC1I(5),AC1S(25)          P312A1
      DIMENSION IAC2I(2,7),2U1S(13),2U3S(3,2,2),2U2S(4,2),2T1S(4)       P312A2
      INTEGER AVI,IU2I(4,2),IT3I(4,2,2),IU3I(2,3,3), MCA3I(2,3,3)       P312A3
      LOGICAL AVB,BVB,CVB,GG1B(2),A1B(2)                                P312A4
      DOUBLE PRECISION DPAVD,DPBVD,DPCVD,A1D(4)                         P312A5
      COMPLEX CHAVC,CHBVC                                               P312A6
C*****                                                                  P0014305
C*****  I N P U T - O U T P U T  TAPE ASSIGNMENT STATEMENTS             P3120520
C*****                                                                  P0073320
C*****  WHEN EXECUTING ONLY SEGMENT 312, THE FOLLOWING STATEMENTS       P0073325
C*****  NUVI=6 AND IRVI=5 MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.P0073330
C*****                                                                  P0073335
C=    NUVI = 6                                                          P0073340
C=    IRVI = 5                                                          P0073345
      NUVI = 6                                                          P312B1
      IRVI = 5                                                          P312B2
C*****                                                                  P0073350
      DATA IU2I(1,1),IU2I(2,1),IU2I(3,1),IU2I(4,1),IU2I(1,2),IU2I(2,2), P3120530
     1     IU2I(3,2)/2H(A,2H2/,2H2X,2H,5,2H(A,2H2),1H) /                P3120540
      DATA 2U1S(1),2U1S(2),2U1S(3),2U1S(4),2U1S(5),2U1S(6),2U1S(7),     P3120550
     1     2U1S(8),2U1S(9),2U1S(10),2U1S(11),2U1S(12)  /                P3120560
     2     2H( ,2H  ,2HF3,2H.3,1H,,2HF3,2H.0,2H, ,2H2(,2HF6,2H.2,2H)) / P3120570
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      DATA IU3I(1,1,1),IU3I(2,1,1),IU3I(1,2,1),IU3I(2,2,1),IU3I(1,3,1), P3120580
     1     IU3I(2,3,1),IU3I(1,1,2),IU3I(2,1,2) /                        P3120590
     2     2H( ,2H D,2H16,2H.9,2H, ,1HD,2H9.,2H2) /                     P3120600
      DATA IT3I(1,1,1),IT3I(2,1,1),IT3I(3,1,1),IT3I(4,1,1),IT3I(1,2,1), P3120610
     1     IT3I(2,2,1),IT3I(3,2,1),IT3I(4,2,1),IT3I(1,1,2),IT3I(2,1,2), P3120620
     2     IT3I(3,1,2),IT3I(4,1,2),IT3I(1,2,2)  /2H(2,2HX,,2HI5,2H,1,   P3120630
     3     2HX,,2HI4,2H,I,2H4,,2H1X,2H,I,2H2,,2HI3,1H)  /               P3120640
      DATA 2T1S(1),2T1S(2),2T1S(3),2T1S(4)/2H(E,2H11,2H.2,1H) /         P3120650
      DATA 2U3S(1,1,1),2U3S(2,1,1),2U3S(3,1,1),2U3S(1,2,1),2U3S(2,2,1), P3120660
     1     2U3S(3,2,1) / 2H(4,2H(E,2H14,2H.6,2H/),1H)  /                P3120670
      DATA 2U2S(1,1),2U2S(2,1),2U2S(3,1),2U2S(4,1),2U2S(1,2),2U2S(2,2), P3120680
     2     2U2S(3,2) / 2H(L,2H3,,2H2(,2HL2,2H),,2HL3,1H)  /             P3120690
C*****    THE FOLLOWING READ STATEMENTS INITIALIZE SOME      7.2.3.10/51P3120700
C*****    ARRAYS WITH FORMAT STATEMENTS TO BE USED FOR                  P3120710
C*****    READING WITH I, E AND L CONVERSIONS AND FOR                   P3120720
C*****    WRITING WITH A, F AND D CONVERSIONS                           P3120730
C*****                                                                  P3120740
      WRITE (NUVI,3120)                                                 P3120750
C*****  CARD 1                                                          P3120760
      READ (IRVI,3121) AC1S(1), AC1S(2), AC1S(3), AC1S(4), AC1S(5),     P3120770
     1     AC1S(6),AC1S(7),AC1S(8),AC1S(9),AC1S(10),AC1S(11),AC1S(12)   P3120780
C*****  CARD 2                                                          P3120790
      READ (IRVI,3122) L1I                                              P3120800
C*****  CARD 3                                                          P3120810
      READ (IRVI,3121) A3S                                              P3120820
C*****  CARD 4                                                          P3120830
      READ (IRVI,3123) YER1S                                            P3120840
C*****  CARD 5                                                          P3120850
      READ (IRVI,3124) MCA3I                                            P3120860
C*****  CARD 6                                                          P3120870
      READ (IRVI,3124) IAC2I                                            P3120880
C*****                                                                  P3120890
C*****                                                                  P3120900
C*****    THE FOLLOWING STATEMENTS MAKE USE OF THE FORMATS              P3120910
C*****    CONTAINED IN THE ARRAYS                                       P3120920
C*****                                                                  P3120930
C*****    READ AND WRITE WITH I CONVERSION USING FORMATS IN ARRAYS      P3120940
      JACVI =  4756                                                     P3120950
      KBCVI = -867                                                      P3120960
      LCCVI = 224                                                       P3120970
      MDCVI = +39                                                       P3120980
      NECVI = -6                                                        P3120990
C*****  CARD 7 WITH CARD 1 AS FORMAT                                    P3121000
      READ (IRVI,AC1S) AVI, MRRVI, IAC1I(1), IAC1I(2), IAC1I(3)         P3121010
      WRITE (NUVI,3125)                                                 P3121020
      WRITE(NUVI,IT3I)JACVI, KBCVI, LCCVI, MDCVI, NECVI, AVI, MRRVI,    P3121030
     1                  IAC1I(1), IAC1I(2), IAC1I(3)                    P3121040
C*****    READ AND WRITE WITH F CONVERSION USING FORMATS IN ARRAYS      P3121050
      AVS   = .234                                                      P3121060
      BVS   = 98.                                                       P3121070
      CHAVC = (-77.27,+547.18E0)                                        P3121080
C*****  CARD 8 FORMAT IS (F3.3,F3.0,2(F6.2))                            P3121090
      READ (IRVI,2U1S) CVS, DVS, CHBVC                                  P3121100
      WRITE (NUVI,3127)                                                 P3121110
      WRITE (NUVI,MCA3I) AVS, BVS, CHAVC                                P3121120
      WRITE (NUVI,MCA3I) CVS, DVS, CHBVC                                P3121130
C*****    READ AND WRITE WITH E CONVERSION USING FORMATS IN ARRAYS      P3121140
      AVS   = -0.76E+9                                                  P3121150
      BVS   = +08.93421E-13                                             P3121160
C*****  CARD 9 WITH CARD 2 AS FORMAT                                    P3121170
      READ  (IRVI,L1I) 2U3S(2,2,2),CVS,DVS,2U3S(1,2,2)                  P3121180
      WRITE (NUVI,3128)                                                 P3121190
      WRITE(NUVI,2T1S) AVS, 2U3S(2,2,2)                                 P3121200
      WRITE (NUVI,3129)                                                 P3121210
      WRITE (NUVI, 2U3S) BVS,2U3S(1,2,2),CVS, DVS                       P3121220
C*****    READ AND WRITE WITH D CONVERSION USING FORMATS IN ARRAYS      P3121230
      DPAVD = -0.357901246D+00                                          P3121240
      DPBVD = +.00052D+1                                                P3121250
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C*****  CARD 10 FORMAT IS  (D16.9,D9.2)                                 P3121260
      READ  (IRVI,IU3I) A1D(1), DPCVD                                   P3121270
      WRITE (NUVI,9930)                                                 P3121280
      WRITE (NUVI,IAC2I) DPAVD,DPBVD,A1D(1),DPCVD                       P3121290
C*****    READ AND WRITE WITH L CONVERSION USING FORMATS IN ARRAYS      P3121300
      AVB = .TRUE.                                                      P3121310
      BVB = .FALSE.                                                     P3121320
C*****  CARD 11 WITH CARD 3 AS FORMAT                                   P3121330
      READ  (IRVI,A3S) A1B(1), A1B(2), CVB, GG1B(2)                     P3121340
      WRITE (NUVI,9931)                                                 P3121350
      WRITE (NUVI, ZU2S) AVB, AVB, BVB, BVB                             P3121360
      WRITE (NUVI,ZU2S) A1B(1), A1B(2), CVB, GG1B(2)                    P3121370
C*****    READ AND WRITE WITH A CONVERSION USING FORMATS IN ARRAYS      P3121380
C*****  CARDS 12 AND 13 FORMAT IS (A2/2X,5(A2))                         P3121390
      READ  (IRVI,IU2I) JACVI, AVS, IAC1I(1), GG1B, BVB                 P3121400
      WRITE (NUVI,3126)                                                 P3121410
      WRITE (NUVI,YER1S) JACVI, AVS, IAC1I(1), GG1B, BVB                P3121420
C*****                                                                  P3121430
      CALL FMTQ (NUVI,ZT1S,0.9999,2HHO,2HLL,2HER,2HIT,2HH ,2HCO,2HNS,   P3121440
     1     2HTA,2HNT,2HS ,2HAS,2H C,2HAL,2HL ,2HAR,2HGU,2HME,2HNT,1HS)  P3121450
C*****                                                                  P3121460
C*****    ADDITIONAL FORMAT STATEMENTS REQUIRED BY THIS SEGMENT         P3121470
C*****                                                                  P3121480
C*****    THE FOLLOWING FORMAT STATEMENTS ARE USED TO          7.2.3.10/51P3121490
C*****    READ FORMATS INTO ARRAYS                                      P3121500
3121  FORMAT (27(A2))                                                   P3121510
3122  FORMAT (10(A2))                                                   P3121520
3123  FORMAT ( 7(A2))                                                   P3121530
3124  FORMAT (18(A2))                                                   P3121540
C*****    THE FOLLOWING ARRAYS ARE USED TO WRITE OUT ALL       7.2.3.10/48P3121550
C*****    HOLLERITH INFORMATION, SINCE H FIELD DESCRIPTORS              P3121560
C*****    MAY NOT BE PART OF A FORMAT WITHIN AN ARRAY                   P3121570
3120  FORMAT (1H1,1X,31HRDFMT - (312) FORMATS IN ARRAYS//               P3121580
     1 22H  ASA REFS. - 7.2.3.10//34H  EACH GROUP OF LINES SHOULD MATCH)P3121590
3125  FORMAT (/ 22H   4756 -867 224 39 -6)                              P3121600
3126  FORMAT (/ 13H  ABCDE+*=123)                                       P3121610
3127  FORMAT (/ 25H  0.234 98. -77.27 547.18)                           P3121620
3128  FORMAT (/11H  -0.76E+09)                                          P3121630
3129  FORMAT (/14H  0.893421E-12)                                       P3121640
9930  FORMAT (/ 27H  -0.357901246D+00 0.52D-02)                         P3121650
9931  FORMAT (/ 10H  T T F  F)                                          P3121660
C*****    END OF TEST SEGMENT 312                                       P3121670
C*****  WHEN EXECUTING ONLY SEGMENT 312, THE  STOP  AND  END  CARDS     P3121680
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3121690
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3121700
C=    STOP                                                              P3121710
C=    END                                                               P3121720
      STOP                                                              P312C1
      END                                                               P312C2
C***********************************************************************P4620010
C*****                                                                  P4620020
C*****                        FMTQ - (462)                              P4620030
C*****                                                                  P4620040
C***********************************************************************P4620050
C*****  GENERAL PURPOSE                                                 P4620060
C*****    TO DEFINE SUBROUTINE FMTQ WHICH IS USED IN SEGMENT 312        P4620070
C*****    TO TEST FORMAT IN AN ARRAY PASSED AS AN ARGUMENT, AN          P4620080
C*****            EMPTY FORMAT STATEMENT, AND                           P4620090
C*****            HOLLERITH IN A CALL ARGUMENT                          P4620100
      SUBROUTINE FMTQ(NWVI,ZTW1S,AWVS,IWVH,JWVH,KWVH,LWVH,MWVH,NWVH,    P4620110
     1                  IIWVH,JJWVH,KKWVH,LLWVH,MMWVH,NNWVH,IJWVH,IKWVH, P4620120
     2                  ILWVH,IMWVH,INWVH,JIWVH,JKWVH)                  P4620130
      DIMENSION ZTW1S(4)                                                P4620140
      WRITE (NWVI, 4620)                                                P4620150
4620  FORMAT(/11H    +.10E+01 )                                         P4620160
C*****FORMAT LABELED ZTW1S PASSED AS ARGUMENT IS  (E11.2)               P4620170
      WRITE (NWVI, ZTW1S) AWVS                                          P4620180
      WRITE (NWVI, 4621)                                                P4620190
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4621  FORMAT(/39H  HOLLERITH CONSTANTS AS CALL ARGUMENTS )                 P4620200
      WRITE (NWVI,4622)  IWVH, JWVH,KWVH,LWVH,MWVH,NWVH,IIWVH,JJWVH,        P4620210
     1                   KKWVH, LLWVH,MMWVH,NNWVH,IJWVH,IKWVH,ILWVH,        P4620220
     2                   IMWVH,INWVH,JIWVH,JKWVH                            P4620230
4622  FORMAT(2X, 19A2)                                                      P4620240
      WRITE (NWVI,4623)                                                     P4620250
4623  FORMAT(//29H  TEST EMPTY FORMAT STATEMENT /                           P4620260
     136H  THE FOLLOWING LINE SHOULD BE BLANK )                             P4620270
      WRITE(NWVI,4624)                                                      P4620280
4624  FORMAT( )                                                             P4620290
      WRITE(NWVI,4625)                                                      P4620300
4625  FORMAT(23H  END EMPTY FORMAT TEST //22H  END SEGMENT 312 TEST )       P4620310
      RETURN                                                                P4620320
      END                                                                   P4620330
(I5,6X, I4, 2(I3),  I2)
(E   9.2,3(E13.6))
( L1 , 2(L2),L3)
(2X,A2,5(A2))
(2X,F5.3,   F4.0, 2(F7.2))
(2X , D 16.9,D9.2)
 4756       -867224+39-6
23498.-77.27547.18
-.0076+11+08.93421E-13  893.421E-15+08.93421E-13
-0.357901246D+00 +0.52D-2
TTA FF9$
AB
  CDE+*=123
C***********************************************************************P3500010
C*****                                                                  P3500020
C*****                         MISC5 - (350)                            P3500030
C*****                                                                  P3500040
C***********************************************************************P3500050
C*****  GENERAL PURPOSE                                          ASA REFP3500060
C*****    TO TEST SPECIFICATIONS FOR PROGRAM FORM                3.2    P3500070
C*****                                                           3.2.1  P3500080
C*****                                                           3.4    P3500090
C*****                                                           3.5    P3500100
C*****  GENERAL COMMENTS                                                P3500110
C*****  * AMONG OTHER THINGS, THIS SEGMENT TESTS THAT COMMENTS ARE      P3500120
C*****    NOT EXECUTEO ANO, AS A RESULT OF THIS TEST, THE COMPILER      P3500130
C*****    MAY GENERATE SOME WARNING MESSAGES.                           P3500140
C*****  * BECAUSE OF THE NATURE OF THE TESTS BEING PERFORMEO, SOME      P3500150
C*****    LABELS AND NAMES 0O NOT FOLLOW THE CONVENTIONS                P3500160
C*****    SPECIFIEO IN THE USERS MANUAL.                                P3500170
C*****                                                                  P3500180
C*****  S P E C I F I C A T I O N S  SEGMENT 350                        P3500190
C*****                                                                  P0014310
C*****  WHEN EXECUTING ONLY SEGMENT 350, THE SPECIFICATION STATEMENTS   P0014315
C*****  WHICH APPEAR AS COMMENT CAROS MUST HAVE THE C=                  P0014320
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P0014325
C*****                                                                  P0014330
C=    DIMENSION J(2), JJ(1,1), JJJ(1,1,1), JJJJ(1,1),JJJJJ(1), JJJJJJ(1)P0014335
      DIMENSION J(2), JJ(1,1), JJJ(1,1,1), JJJJ(1,1),JJJJJ(1), JJJJJJ(1)P350A1
C*****                                                                  P0014340
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.      P3500200
C*****  WHEN EXECUTING ONLY SEGMENT 350, THE FOLLOWING STATEMENT        P0073360
C*****  NUVI = 6  MUST HAVE THE C=  IN COLUMNS 1 ANO 2 REMOVEO.         P0073365
C*****                                                                  P0073370
C=    NUVI = 6                                                          P0073375
      NUVI = 6                                                          P350B1
      WRITE (NUVI,3500)                                                 P3500210
3500  FORMAT (1H1,1X,32HMISC5 - (350) SPECIFICATIONS FOR/ 16X,    12HPROP3500220
     1GRAM FORM//2X,32HASA REFS. - 3.2  3.2.1  3.4  3.5//               P3500230
     2 2X,35HTEST THAT COMMENTS ARE NOT EXECUTED)                       P3500240
C*****    HEAOER FOR SEGMENT 350 WRITTEN                                P3500250
C*****    TEST THAT COMMENTS ARE NOT EXECUTED                    3.2.1/36P3500260
C*****WRITE (NUVI,3501)                                                 P3500270
3501  FORMAT  (2X,34HERROR - COMMENT STATEMENT EXECUTEO)                P3500280
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C*****GO TO 3504                                                        P3500290
3502  MRRVI = 0                                                         P3500300
C*****IF (MRRVI) 3504, 3504, 3504                                       P3500310
3503  MRRVI = 1                                                         P3500320
C*****MRRVI = -1                                                        P3500330
      IF (MRRVI) 3504,3504,3505                                         P3500340
3504  WRITE (NUVI,3501)                                                 P3500350
3505  WRITE (NUVI,3506)                                                 P3500360
3506  FORMAT  (2X,35HTEST SUCCESSFUL IF NO ERROR MESSAGE)               P3500370
      GO TO 3509                                                        P3500380
C*****    TEST THAT ALL 72 CHARACTERS IN A LINE MAY BE USED       3.2/24P3500390
3509  WRITE (NUVI,8100)                                                 P3500400
8100  FORMAT(///2X,22HTEST 72 CHARACTER LINE)                           P3500410
      WRITE (NUVI,8101)                                                 P3500420
8101 0FORMAT( /2X,29H12345678910111213141516171819/2X,29H123456789101112P3500430
     113141516171819)                                                   P3500440
      WRITE (NUVI,8102)                                                 P3500450
8102  FORMAT ( /2X,36HTEST SUCCESSFUL IF 2 LINES ABOVE ARE/2X,19HDIGITS P3500460
     11 THROUGH 19)                                                     P3500470
C*****    TEST THAT STATEMENT LABELS MAY BE 1, 2, 3, 4 OR 5       3.4/12P3500480
C*****    DIGITS LONG                                                   P3500490
      WRITE (NUVI,8112)                                                 P3500500
8112  FORMAT (//2X,37HTEST 1,2,3,4,5 CHARACTER STMNT. LABEL/)           P3500510
      GO TO 1                                                           P3500520
8113  GO TO 22                                                          P3500530
8114  GO TO 333                                                         P3500540
8115  GO TO 8099                                                        P3500550
8097  GO TO 22255                                                       P3500560
1     MRRVI = 1                                                         P3500570
      WRITE (NUVI,8118) MRRVI                                           P3500580
      GO TO 8113                                                        P3500590
22    MRRVI = 2                                                         P3500600
      WRITE (NUVI,8118) MRRVI                                           P3500610
      GO TO 8114                                                        P3500620
333   MRRVI = 3                                                         P3500630
      WRITE (NUVI,8118) MRRVI                                           P3500640
      GO TO 8115                                                        P3500650
8099  MRRVI = 4                                                         P3500660
      WRITE(NUVI, 8118) MRRVI                                           P3500670
      GO TO 8097                                                        P3500680
22255 MRRVI = 5                                                         P3500690
      WRITE (NUVI,8118) MRRVI                                           P3500700
8118  FORMAT (  2X,I1,1X,24HCHARACTER LABEL ACCEPTED)                   P3500710
C*****    TEST THAT VARIABLE AND ARRAY NAMES MAY BE               3.5/21P3500720
C*****    1, 2, 3, 4 OR 5 CHARACTERS LONG                               P3500730
      WRITE (NUVI,8098)                                                 P3500740
8098  FORMAT (//2X,36HTEST 1,2,3,4,5,6 CHARACTER VARIABLES/2X,          P3500750
     115HAND ARRAY NAMES)                                               P3500760
      M = 1                                                             P3500770
      MM = 1                                                            P3500780
      MMM = 1                                                           P3500790
      MMMM = 1                                                          P3500800
      MMMMM = 1                                                         P3500810
      MMMMMM = 1                                                        P3500820
      J(1) = 1                                                          P3500830
      JJ(1,1) = 1                                                       P3500840
      JJJ(1,1,1) = 1                                                    P3500850
      JJJJ(1,1) = 1                                                     P3500860
      JJJJJ(1) = 1                                                      P3500870
      JJJJJJ(1) = 1                                                     P3500880
      IF (M-1) 8119, 8103, 8119                                         P3500890
8103  IF (MM-1) 8119,8104,8119                                          P3500900
8104  IF (MMM-1) 8119,8105,8119                                         P3500910
8105  IF (MMMM-1) 8119, 8106,8119                                       P3500920
8106  IF (MMMMM-1) 8119,8096,8119                                       P3500930
8096  IF (MMMMMM-1) 8119, 8107, 8119                                    P3500940
8107  IF (J(1)-1) 8119,8108,8119                                        P3500950
8108  IF (JJ(1,1)-1) 8119,8109,8119                                     P3500960
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8109  IF (JJJ(1,1,1)-1) 8119,8110,8119                                  P3500970
8110  IF (JJJJ(1,1)-1) 8119,8111,8119                                   P3500980
8111  IF (JJJJJ(1)-1) 8119,8095,8119                                    P3500990
8095  IF (JJJJJJ(1)-1) 8119,8121,8119                                   P3501000
8119  WRITE (NUVI,8120)                                                 P3501010
8120  FORMAT (/ 2X,21H**TEST UNSUCCESSFUL**)                             P3501020
      GO TO 8123                                                        P3501030
8121  WRITE (NUVI,8122)                                                 P3501040
8122  FORMAT (/ 2X,38H**TEST SUCCESSFUL-ALL NAMES ACCEPTED**)           P3501050
C*****    TEST THAT STATEMENT LABELS MAY BE PLACED                3.4/13P3501060
C*****    ANYWHERE IN COLUMNS 1 TO 5 AND THAT LEADING             3.4/17P3501070
C*****    ZEROS ON STATEMENT LABELS ARE NOT SIGNIFICANT                 P3501080
8123  WRITE (NUVI,8116)                                                 P3501090
8116  FORMAT (//2X,34HTEST PLACEMENT OF STATEMENT LABELS/2X,            P3501100
     1 29HAND LABELS WITH LEADING ZEROS/)                               P3501110
      MRRVI = 1                                                         P3501120
      GO TO 10                                                          P3501130
 2    MRRVI = 2                                                         P3501140
      GO TO 010                                                         P3501150
  3   MRRVI = 3                                                         P3501160
      GO TO 0010                                                        P3501170
   4  MRRVI = 4                                                         P3501180
      GO TO 0010                                                        P3501190
    5 MRRVI = 5                                                         P3501200
      GO TO 0010                                                        P3501210
06    MRRVI = 6                                                         P3501220
      GO TO 0010                                                        P3501230
007   MRRVI = 7                                                         P3501240
      GO TO 0010                                                        P3501250
0008  MRRVI = 8                                                         P3501260
      GO TO 0010                                                        P3501270
 0009 MRRVI = 9                                                         P3501280
 0010 WRITE (NUVI,11) MRRVI                                             P3501290
011   FORMAT ( I10)                                                     P3501300
      GO TO (02,3,004,0005,6,7,8,009,8117), MRRVI                       P3501310
8117  WRITE (NUVI,012)                                                  P3501320
 12   FORMAT (//2X,28HTEST SUCCESSFUL IF 9 NUMBERS/2X,                  P3501330
     1 31HIN SEQUENTIAL ORDER FROM 1 TO 9/2X,                           P3501340
     2 17HARE WRITTEN ABOVE//2X,18HEND OF SEGMENT 350)                  P3501350
C*****    END OF TEST SEGMENT 350                                       P3501360
C*****  WHEN EXECUTING ONLY SEGMENT 350, THE  STOP  AND  END  CARDS     P3501370
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3501380
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3501390
C=    STOP                                                              P3501400
C=    END                                                               P3501410
      STOP                                                              P350C1
      END                                                               P350C2
C***********************************************************************P3510010
C*****                                                                  P3510020
C*****                       FUNMX - (351)                              P3510030
C*****                                                                  P3510040
C***********************************************************************P3510050
C*****  GENERAL PURPOSE                                         ASA REF P3510060
C*****    THIS SEGMENT FURTHER TESTS SOME                       8.3.3   P3510070
C*****    BASIC EXTERNAL FUNCTIONS BY USING TRIGONOMETRIC               P3510080
C*****    FORMULAE                                                      P3510090
C*****                                                                  P3510100
C*****  O U T P U T  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.     P3510110
C*****                                                                  P0073380
C*****  WHEN EXECUTING ONLY SEGMENT 351, THE FOLLOWING STATEMENT        P0073385
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073390
C*****                                                                  P0073395
C=    NUVI = 6                                                          P0073400
      NUVI = 6                                                          P351B1
C*****                                                                  P0073405
      WRITE (NUVI,3510)                                                 P3510120
3510  FORMAT (1H1,2X,13HFUNMX - (351)//1X,22H THIS SEGMENT FURTHER      P3510130
     1  5HTESTS                     /21H  SOME BASIC EXTERNAL,          P3510140
     2 10H FUNCTIONS /33H  BY USING TRIGONOMETRIC FORMULAE//            P3510150
     319H  ASA REFS. - 8.3.3//2X,7HRESULTS)                             P3510160
C*****    HEAOER FOR SEGMENT 351 WRITTEN                                P3510170
C*****    TEST STATEMENTS USING ORDINARY TRIGONOMETRIC FUNCTIONS        P3510180
      CMAVS = 1.75                                                      P3510190
      CMCVS = ALOG(EXP(CMAVS)) - 1.75                                   P3510200
      CMDVS = EXP(ALOG(CMAVS)) - 1.75                                   P3510210
      CMEVS = (SIN(2.0)) ** 2 + (COS(2.0)) ** 2 - 1.0                   P3510220
      CMFVS = (1.0/COS(1.2)) ** 2 -((SIN(1.2) / COS(1.2)) ** 2) - 1.0   P3510230
      WRITE (NUVI,3511) CMCVS, CMOVS, CMEVS, CMFVS                      P3510240
      CMCVS = SIN(.78) - SQRT(1. - COS(0.78) ** 2)                      P3510250
      CMOVS = COS(1.57) - SQRT(1.0 - SIN(1.57) ** 2)                    P3510260
      CMEVS = SQRT((1.0/COS(0.5236))**2-1.0)-SIN(0.5236)/COS(0.5236)    P3510270
      CMFVS = ATAN2(SIN(0.5),COS(0.5)) - 0.5                            P3510280
      WRITE (NUVI,3511) CMCVS, CMDVS, CMEVS, CMFVS                      P3510290
C*****    TEST STATEMENTS USING HYPERBOLIC FUNCTIONS                    P3510300
      CMAVS = EXP(1.85)                                                 P3510310
      CMBVS = EXP(-1.85)                                                P3510320
      CMCVS = TANH(1.85) - ((CMAVS - CMBVS) / (CMAVS + CMBVS))          P3510330
      CMEVS = 2./(EXP(1.05) + EXP(-1.05)) - SQRT(1.0-TANH(1.05)**2)     P3510340
      CMFVS = TANH(2.01)/ (SQRT(1.0 - TANH(2.01)**2))-.5*(EXP(2.01) -   P3510350
     1 EXP(-2.01))                                                      P3510360
      WRITE (NUVI,3512) CMCVS, CMEVS, CMFVS                             P3510370
      WRITE (NUVI,3513)                                                 P3510380
3511  FORMAT (//4(F15.5/))                                              P3510390
3512  FORMAT (//3(F15.5/))                                              P3510400
3513  FORMAT (//39H  ALL ABOVE ANSWERS SHOULO BE 0 PLUS OR /            P3510410
     1  40H  MINUS AN ERROR FACTOR OF NOT MORE THAN /                   P3510420
     2 12H  10 ** (-4))                                                 P3510430
C*****    END OF TEST SEGMENT 351                                       P3510440
C*****  WHEN EXECUTING ONLY SEGMENT 351, THE  STOP  AND  END  CARDS     P3510450
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3510460
C*****  IN COLUMNS  1  AND  2  REMOVEO.                                 P3510470
C=    STOP                                                              P3510480
C=    ENO                                                               P3510490
      STOP                                                              P351C1
      END                                                               P351C2
C***********************************************************************P3520010
C*****                                                                  P3520020
C*****                             NAMES - (352)                        P3520030
C*****                                                                  P3520040
C***********************************************************************P3520050
C*****  GENERAL PURPOSE                                         ASA REF P3520060
C*****    TO TEST THE CAPABILITY OF COMPILERS TO IOENTIFY OATA 10.1.7/54P3520070
C*****    NAMES THAT RESEMBLE FORTRAN VERBS ANO/OR PREOEFINEO           P3520080
C*****    FUNCTION NAMES.                                               P3520090
C*****  GENERAL COMMENTS                                                P3520100
C*****    BECAUSE OF THE NATURE OF THIS TEST SEGMENT, NAMING            P3520110
C*****    CONVENTIONS THAT EXISTEO IN OTHER SEGMENTS WILL NOT           P3520120
C*****    BE OBSERVEO.                                                  P3520130
C*****                                                                  P3520140
C*****  S P E C I F I C A T I O N S  SEGMENT 352                        P3520150
C*****                                                                  P0014350
C*****  WHEN EXECUTING ONLY SEGMENT 352, THE SPECIFICATION STATEMENTS   P0014355
C*****  WHICH APPEAR AS COMMENT CAROS, MUST HAVE THE  C=                P0014360
C*****  IN COLUMNS  1  ANO  2  REMOVEO.                                 P0014365
C*****                                                                  P0014370
C=    OIMENSION GOTO(2,2), IF(5)                                        P0014375
      OIMENSION GOTO(2,2), IF(5)                                        P352A1
C*****                                                                  P0014380
C*****  O U T P UT  T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.      P3520160
C*****                                                                  P0073410
C*****  WHEN EXECUTING ONLY SEGMENT 352, THE FOLLOWING STATEMENT        P0073415
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVEO.          P0073420
C*****                                                                  P0073425
C=    NUVI = 6                                                          P0073430
      NUVI = 6                                                          P352B1
C*****                                                                  P0073435
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      WRITE (NUVI,3520)                                                 P3520170
3520  FORMAT (1H1 ,1X,13HNAMES - (352)//2X,36HTEST OF THE COMPILERS CAPAP3520180
     1BILITY OF /2X,37HIDENTIFYING DATA NAMES THAT RESEMBLE /2X,        P3520190
     2 32HFORTRAN VERBS AND/OR PREDEFINED /2X,15HFUNCTION NAMES //      P3520200
     3 22H  ASA REFS. - 10.1.7/4 //2X,7HRESULTS)                        P3520210
C*****    HEADER FOR SEGMENT 352 WRITTEN                                P3520220
      INTEG = 0                                                         P3520230
      REAL = 2.0                                                        P3520240
      GOTO5 = REAL - 2.0                                                P3520250
      GOTO(1,2) = 10.0 - 5.0 * 2.0                                      P3520260
      DO13I = INTEG                                                     P3520270
   13 DO14J = INTEG +0                                                  P3520280
   14 IF(2) = 5-5                                                       P3520290
      CALL = 0                                                          P3520300
      STOP7 = REAL - 2.0                                                P3520310
      PAUSE = REAL / 2.0 - 1.0                                          P3520320
      READ6 = 0.0 ** 5                                                  P3520330
      WRITE = 7.0 - 7.0                                                 P3520340
      WRITE (NUVI,3521) GOTO5, GOTO(1,2), DO13I, DO14J, IF(2), CALL,    P3520350
     1 STOP7, PAUSE, READ6, WRITE                                       P3520360
3521  FORMAT (//10(F10.5/))                                             P3520370
C*****    TEST THAT THE SAME INTRINSIC FUNCTION NAMES OF                P3520380
C*****    A PROGRAM UNIT OF AN EXECUTABLE PROGRAM CAN BE                P3520390
C*****    USED TO IDENTIFY SOME OTHER ENTITY IN A DIFFERENT             P3520400
C*****    PROGRAM UNIT OF THAT EXECUTABLE PROGRAM                       P3520410
      MCAVI = IABS(-5)                                                  P3520420
      CALL MAQQ(MCAVI,IVI)                                              P3520430
      MCCVI = IVI                                                       P3520440
      MCBVI = ISIGN(1,-2)                                               P3520450
      CALL MBQQ(MCBVI,IVI)                                              P3520460
      MCDVI = IVI                                                       P3520470
      CMAVS = FLOAT(5 + 7)                                              P3520480
      CALL AMQQ(CMAVS,AVS)                                              P3520490
      CMCVS = AVS                                                       P3520500
      CMBVS = ABS(-10.0 - 8.00)                                         P3520510
      CALL BMQQ(CMBVS,AVS)                                              P3520520
      CMDVS = AVS                                                       P3520530
      WRITE (NUVI,3522) MCCVI, MCDVI, CMCVS, CMDVS                      P3520540
3522  FORMAT (/2(I10/)//2(F10.5/)//35H  ALL ABOVE ANSWERS SHOULD BE 0 FOP3520550
     1R/36H  THIS TEST SEGMENT TO BE SUCCESSFUL)                        P3520560
C*****    END OF TEST SEGMENT 352                                       P3520570
C*****  WHEN EXECUTING ONLY SEGMENT 352, THE  STOP  AND  END  CARDS     P3520580
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3520590
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3520600
C=    STOP                                                              P3520610
C=    END                                                               P3520620
      STOP                                                              P352C1
      END                                                               P352C2
C***********************************************************************P4130010
C*****                                                                  P4130020
C*****                       MAQQ - (413)                               P4130030
C*****                                                                  P4130040
C***********************************************************************P4130050
C*****  GENERAL PURPOSE                                                 P4130060
C*****    THIS SEGMENT CONTAINS A SUBROUTINE WHICH IS CALLED            P4130070
C*****    BY SEGMENT 352.                                               P4130080
C*****  GENERAL COMMENTS                                                P4130090
C*****    SUBROUTINE MAQQ BEING DEFINED                                 P4130100
      SUBROUTINE MAQQ(MWVI,IWVI)                                        P4130110
      IABS = MWVI                                                       P4130120
      IWVI = IABS + ISIGN(MWVI, -MWVI)                                  P4130130
      RETURN                                                            P4130140
      END                                                               P4130150
C***********************************************************************P4630010
C*****                                                                  P4630020
C*****                       MBQQ - (463)                               P4630030
C*****                                                                  P4630040
C***********************************************************************P4630050
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C*****  GENERAL PURPOSE                                                 P4630060
C*****    THIS SEGMENT CONTAINS A SUBROUTINE WHICH IS CALLED            P4630070
C*****    BY SEGMENT 352                                                P4630080
C*****  GENERAL COMMENTS                                                P4630090
C*****    SUBROUTINE  MBQQ BEING DEFINED                                P4630100
      SUBROUTINE MBQQ(MWVI, IWVI)                                       P4630110
      ISIGN = -MWVI                                                     P4630120
      IWVI = ISIGN + MWVI                                               P4630130
      RETURN                                                            P4630140
      END                                                               P4630150
C***********************************************************************P4730010
C*****                                                                  P4730020
C*****                       AMQQ - (473)                               P4730030
C*****                                                                  P4730040
C***********************************************************************P4730050
C*****  GENERAL PURPOSE                                                 P4730060
C*****    THIS SEGMENT CONTAINS A SUBROUTINE WHICH IS CALLED            P4730070
C*****    BY SEGMENT 352                                                P4730080
C*****  GENERAL COMMENTS                                                P4730090
C*****    SUBROUTINE AMQQ BEING DEFINED                                 P4730100
C*****STATEMENT FUNCTION NAME IS THE SAME AS SUBROUTINE NAME CALLED BY  P4730110
C*****SEGMENT 352, STAT. FUNCTION DUMMY ARGUMENT NAME SAME AS SUBROUTINEP4730120
C*****DUMMY ARGUMENT NAME, VARIABLE IS REFERENCED IN STAT. FUNCTION     P4730130
      SUBROUTINE AMQQ(CWVS, AWVS)                                       P4730140
      BMQQ(CWVS) = CWVS + BVS                                           P4730150
      FLOAT = AVS                                                       P4730160
      BVS = CWVS                                                        P4730170
      AWVS = BMQQ(FLOAT) - (BVS + 1.0)                                  P4730180
      DATA AVS /1.0/                                                    P4730190
      RETURN                                                            P4730200
      END                                                               P4730210
C***********************************************************************P4830010
C*****                                                                  P4830020
C*****                       BMQQ - (483)                               P4830030
C*****                                                                  P4830040
C***********************************************************************P4830050
C*****  GENERAL PURPOSE                                                 P4830060
C*****    THIS SEGMENT CONTAINS A SUBROUTINE WHICH IS CALLED            P4830070
C*****    BY SEGMENT 352                                                P4830080
C*****  GENERAL COMMENTS                                                P4830090
C*****    SUBROUTINE BMQQ BEING DEFINED                                 P4830100
      SUBROUTINE BMQQ(CWVS, AWVS)                                       P4830110
      ABS = CWVS                                                        P4830120
      AWVS = FLOAT(ISIGN(IFIX(ABS), - 2)) + 18.0                        P4830130
      RETURN                                                            P4830140
C*****    END OF TEST SEGMENT 483                                       P4830150
      END                                                               P4830160
C***********************************************************************P3600010
C*****                                                                  P3600020
C*****                       SPEC2 - (360)                              P3600030
C*****                                                                  P3600040
C***********************************************************************P3600050
C*****  GENERAL PURPOSE                                        ASA REFS P3600060
C*****  * TO TEST COMMON, DIMENSION AND EQUIVALENCE              7.2.1.2P3600070
C*****    STATEMENTS                                             7.2.1.3P3600080
C*****  *  TO TEST THAT VARIABLES AND ARRAYS WHICH ARE           7.2.1.4P3600090
C*****    EQUATED AND/OR IN COMMON MAY BE USED IN A                     P3600100
C*****    VARIETY OF FORTRAN STATEMENTS                                 P3600110
C*****  RESTRICTIONS OBSERVED                                           P3600120
C*****  * NO DUMMY ARGUMENTS APPEAR IN COMMON OR EQUIVALENCE  7.2.1.4/40P3600130
C*****    STATEMENTS                                          8.4.1.1/23P3600140
C*****  * NUMBER OF SUBSCRIPTS IN EQUIVALENCE STATEMENTS                P3600150
C*****    CORRESPONDS TO ARRAY DIMENSIONALITY OR IS ONE       7.2.1.4/09P3600160
C*****  * COMMON NEVER LENGTHENED BY EQUIVALENCE IN A         7.2.1.4/31P3600170
C*****    BACKWARD DIRECTION                                            P3600180
C*****  * ONLY ONE OF AN EQUATED PAIR OF ITEMS APPEARS        7.2.1.4/36P3600190
C*****    IN COMMON                                                     P3600200
C*****  * VARIABLES ARE NEVER EQUATED TO MORE THAN ONE        7.2.1.4/42P3600210
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C*****    ELEMENT OF THE SAME ARRAY                                     P3600220
C*****  GENERAL COMMENTS                                                P3600230
C*****    THIS SEGMENT FOLLOWS THE ORDER OF SPECIFICATION STATEMENTS    P3600240
C*****    REQUIRED IN BASIC FORTRAN  (SEE 9.1.2/56 IN BASIC ASA BOOK)   P3600250
C*****                                                                  P3600260
C*****  S P E C I F I C A T I O N S  SEGMENT 360                        P3600270
C*****                                                                  P0014390
C*****  WHEN EXECUTING ONLY SEGMENT 360, THE SPECIFICATION STATEMENTS   P0014395
C*****  WHICH APPEAR AS COMMENT CARDS, MUST HAVE THE  C=                P0014400
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P0014405
C*****                                                                  P0014410
C=    DIMENSION MX1I(3), TX1S(3)                                        P0014415
C=    DIMENSION MX2I(2,3), TX2S(2,2), WAZ2S(3,2), RVY1S(2), RVY2S(1,2)  P0014420
C=    DIMENSION JY2I(2,2), JY1I(5), NZ1I(4), NZ2I(4,2), WAZ1S(2)        P0014425
C=    DIMENSION MMY1I(400),NNY3I(20,10,2)                               P0014430
C=    EQUIVALENCE (MMY1I(1),NNY3I(1,1,1)),(NZ1I(1),NNY3I(1))            P0014435
C=    COMMON MX1I, MX2I, NZ1I, NZVI, NZ2I                               P0014440
C=    COMMON MXVI                                                       P0014445
C=    COMMON IAXVI                                                      P0014450
C=    COMMON WAZ1S                                                      P0014455
C=    COMMON TX1S, TX2S, JBZVI, WAZ2S                                   P0014460
C=    EQUIVALENCE (MYVI,NZVI), (IYVI,NZ1I(1)), (NZ2I(4,1), JYVI)        P0014465
C=    EQUIVALENCE (NZ2I(3), KYVI), (AAYVS,JBZVI,JY2I(1), RVY1S(2))      P0014470
C=    EQUIVALENCE (RVY2S(1,1),WAZ1S(2))                                 P0014475
C=    EQUIVALENCE (JY1I(3),RVY1S(2))                                    P0014480
C=    EQUIVALENCE (WAZ2S(1),BBYVS,CCYVS), (WAZ2S(2,1),DDYVS)            P0014485
      DIMENSION MX1I(3), TX1S(3)                                        P360A1
      DIMENSION MX2I(2,3), TX2S(2,2), WAZ2S(3,2), RVY1S(2), RVY2S(1,2)  P360A2
      DIMENSION JY2I(2,2), JY1I(5), NZ1I(4), NZ2I(4,2), WAZ1S(2)        P360A3
      DIMENSION MMY1I(400),NNY3I(20,10,2)                               P360A4
      EQUIVALENCE (MMY1I(1),NNY3I(1,1,1)),(NZ1I(1),NNY3I(1))            P360A5
      COMMON MX1I, MX2I, NZ1I, NZVI, NZ2I                               P360A6
      COMMON MXVI                                                       P360A7
      COMMON IAXVI                                                      P360A8
      COMMON WAZ1S                                                      P360A9
      COMMON TX1S, TX2S, JBZVI, WAZ2S                                   P360AA
      EQUIVALENCE (MYVI,NZVI), (IYVI,NZ1I(1)), (NZ2I(4,1), JYVI)        P360AB
      EQUIVALENCE (NZ2I(3), KYVI), (AAYVS,JBZVI,JY2I(1), RVY1S(2))      P360AC
      EQUIVALENCE (RVY2S(1,1),WAZ1S(2))                                 P360AD
      EQUIVALENCE (JY1I(3),RVY1S(2))                                    P360AE
      EQUIVALENCE (WAZ2S(1),BBYVS,CCYVS), (WAZ2S(2,1),DDYVS)            P360AF
C*****                                                                  P3600280
C*****    SOME OF THE ITEMS DEFINED ABOVE ARE USED IN A VARIETY         P3600290
C*****                                                                  P3600300
C*****    OF FORTRAN STATEMENTS                                         P3600310
C*****    SEGMENT                                                       P3600320
C*****    DEFINE THE SYMBOLIC OUTPUT UNIT FOR USE IN THIS       7.1.3/22P3600330
C*****  O U T P U T - T A P E  ASSIGNMENT STATEMENT.  NO INPUT TAPE.    P3600340
C*****                                                                  P3600350
C*****  WHEN EXECUTING ONLY SEGMENT 360, THE FOLLOWING STATEMENT        P0073440
C*****  NUVI = 6  MUST HAVE THE C= IN COLUMNS 1 AND 2 REMOVED.          P0073445
C*****                                                                  P0073450
C=    NUVI = 6                                                          P0073455
      NUVI = 6                                                          P360B1
C*****                                                                  P0073460
      JY2I(1,1) = NUVI                                                  P3600360
C*****    WRITE HEADER FOR THIS SEGMENT                                 P3600370
      WRITE (JBZVI,3600)                                                P3600380
3600  FORMAT (1H1, 1X,36HSPEC2 - (360) COMMON AND EQUIVALENCE//         P3600390
     1       2X,36HASA REFS - 7.2.1.2  7.2.1.3  7.2.1.4// 2X,7HRESULTS) P3600400
C*****                                                                  P3600410
C*****    TEST THAT EQUIVALENCE WORKS - ASSOCIATED ITEM OF     10.2.2/51P3600420
C*****    SAME TYPE BECOMES DEFINED WHEN EQUATED ITEM IS                P3600430
C*****    DEFINED                                                       P3600440
      MYVI = 2                                                          P3600450
      WAZ1S(2) = 2.0                                                    P3600460
      WRITE (JBZVI,3601) NZVI, RVY2S(1,1)                               P3600470
3601  FORMAT(//27H  LINE 1 BELOW IS HOLLERITH                           P3600480
     1        // 11H     2  2.0/I6,F5.1)                                P3600490
C*****    USE DEFINED ITEMS IN ARITHMETIC STATEMENTS             7.1.1.1P3600500
      JYVI = 4                                                          P3600510
      MXVI = 5                                                          P3600520
      N2VI = 3                                                          P3600530
      JY1I(1) = 1                                                       P3600540
      MX1I(2) = 0                                                       P3600550
      NZ1I(4) = 2                                                       P3600560
      JY2I(2,1) = -8                                                    P3600570
      MX2I(1,3) = 9                                                     P3600580
      N22I(3,2) = 7                                                     P3600590
      MX1I(3) = MX2I(1,3) * (NZVI - JY1I(1)) - 18                       P3600600
      MX2I(1,1) = MX2I(1,3) * (MYVI - JY1I(1))- 18                      P3600610
      MX1I(1) = JYVI + JY2I(2,1) + N2VI - MX1I(2) + JY1I(1)             P3600620
      IAXVI = N22I(4,1) + JY1I(4) + MYVI - MX1I(2) + JY1I(1)            P3600630
      NZ2I(1,1) = MXVI ** N21I(4) - MXVI ** NZ1I(4)                     P3600640
      BBYVS = 2.0                                                       P3600650
      TX1S(3) = 1.0E1                                                   P3600660
      WA22S(1,2) = -3.0E00                                              P3600670
      RVY1S(1)   = .04E+2                                               P3600680
      DDYVS = RVY1S(1) ** (WAZ2S(1,2)-5.0+TX1S(3)) -13.0 + WAZ2S(1,2)   P3600690
      WA22S(2,1) = TX2S(2,2)**(WAZ2S(1,2)-5.0+TX1S(3))-13.0+WAZ2S(1,2)  P3600700
      WRITE (JB2VI,3602) MX1I(3), MX1I(1), NZ2I(1,1), DDYVS             P3600710
      WRITE(JBZVI,7367) MX2I(1,1), IAXVI    , NZ2I(1,1), WAZ2S(2,1)     P3600720
3602  FORMAT (//34H  ANSWERS BELOW SHOULD BE 0 OR 0.0//                 P3600730
     1      3(I6/) , F8.1)                                              P3600740
C*****    USE ITEMS IN ARITHMETIC IF STATEMENTS                  7.1.2.2P3600750
      IF (WA22S(1,2)) 3603,3604,3604                                    P3600760
3603  IF (MX1I(2)) 3604,3605,3604                                       P3600770
3605  IF (TX2S(2,2) + CCYVS ** N21I(4) + TX1S(3)) 3604, 3604, 3606      P3600780
3604  WRITE (JB2VI,3607)                                                P3600790
3607  FORMAT (//22H  ARITHMETIC IF FAILED)                              P3600800
      GO TO 3609                                                        P3600810
3606  WRITE (JB2VI,3608)                                                P3600820
3608  FORMAT (//26H  ARITHMETIC IF SUCCESSFUL)                          P3600830
C*****    USE ITEMS IN DO LOOP                                   7.1.2.8P3600840
3609  DO 7360 JYVI = 1,N2VI,1                                           P3600850
      TX1S(3) = TX1S(3) + 1.0                                           P3600860
7360  CONTINUE                                                          P3600870
      WRITE (JBZVI,7361) TX1S(3)                                        P3600880
7361  FORMAT (//29H  ANSWER BELOW SHOULD BE 13.0// F8.1)                P3600890
C*****    USE ITEM IN COMPUTED GO TO                           7.1.2.1.3P3600900
      GO TO (7362,7362,7364), NZVI                                      P3600910
7362  WRITE (JB2VI,7363)                                                P3600920
7363  FORMAT (//23H  COMPUTED GO TO FAILED)                             P3600930
      GO TO 7366                                                        P3600940
7364  WRITE (JB2VI,7365)                                                P3600950
7365  FORMAT (//27H  COMPUTED GO TO SUCCESSFUL)                         P3600960
7367  FORMAT (3(I6/), F8.1)                                             P3600970
7366  CONTINUE                                                          P3600980
C*****  TEST EQUIVALENCE EXTENDS COMMON                                 P3600990
C*****  ARRAYS- NNY3I(20,10,2) EQUIVALENCED TO ARRAY MMY1I(400) WHICH ISP3601000
C*****  EQUIVALENCED TO THE 10TH STORAGE LOCATION IN BLANK    7.2.1.4/29P3601010
C*****  COMMON (N21I(1))                                                P3601020
      WRITE (NUVI, 8366)                                                P3601030
8366  FORMAT (34H0  TEST EQUIVALENCE EXTENDS COMMON )                   P3601040
      DO 7368  IVI = 1, 400                                             P3601050
7368  MMY1I(IVI) = IVI                                                  P3601060
      IVI = 0                                                           P3601070
      DO 7369 LVI = 1, 2                                                P3601080
      DO 7369 KVI = 1, 10                                               P3601090
      DO 7369 JVI = 1, 20                                               P3601100
      IF(NNY3I(JVI,KVI,LVI)-(JVI+20*(KVI+10*LVI) - 220))7369,8360,7369  P3601110
8360  IVI = IVI + 1                                                     P3601120
7369  CONTINUE                                                          P3601130
      IF (IVI - 400) 8363, 8361, 8363                                   P3601140
8363  WRITE (NUVI, 8364)                                                P3601150
8364  FORMAT(13H0 TEST FAILED )                                         P3601160
```

```
      GO TO 8365                                                        P3601170
8361  WRITE (NUVI, 8362)                                                P3601180
8362  FORMAT(17H0 TEST SUCCESSFUL )                                     P3601190
8365  CONTINUE                                                          P3601200
C*****    END OF TEST SEGMENT 360                                       P3601210
C*****  WHEN EXECUTING ONLY SEGMENT 360, THE  STOP  AND  END  CARDS     P3601220
C*****  WHICH APPEAR AS COMMENT CARDS MUST HAVE THE  C=                 P3601230
C*****  IN COLUMNS  1  AND  2  REMOVED.                                 P3601240
C=    STOP 77777                                                        P3601250
C=    END                                                               P3601260
      STOP 77777                                                        P360C1
      END                                                               P360C2
```

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Volumes 1, 2, and 3 contain the documentation, Version 1 program sting, Version 3 program listing, respectively. The magnetic tape containing the NBS RTRAN Test Programs is available in 7-track BCD, 9-track ASCII or EBCDIC recording.

ABSTRACT *(A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here.)*

e NBS FORTRAN test programs, written in Standard FORTRAN, are designed to test whether FORTRAN compiler accepts the forms and interpretations of the FORTRAN language as desibed in the American National Standard FORTRAN document X3.9-1966. The test programs, mprised of 116 test units, are structured into two versions, each containing approxitely 14,500 punch card images. The test units may be used as separate executable RTRAN programs, or may be linked end to end with other test units, with a minimum of er effort, to improve operating efficiency. Version 1 is structured into 116 executle FORTRAN programs, and Version 3, containing the same 116 test units, is structured to 14 executable FORTRAN programs for use on large FORTRAN processors.

e test program design criteria was to:
. Constrain all test programs to the FORTRAN Standard X3.9-1966.
. Reduce the effect of those areas in which the FORTRAN Standard does not prescribe a method or solution, e.g., range, precision, size of computer, etc.
. Simplify the use of the FORTRAN test programs.
. Test FORTRAN language elements before they are used in support of other tests.
. Maintain an open ended system so that tests may be changed or added.

e test programs require the use of a card reader, printer and one intermediate tape it.

KEY WORDS *(six to twelve entries; alphabetical order; capitalize only the first letter of the first key word unless a proper name; separated by semicolons)*

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